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ABSTRACT

This report documents the results of the first statewide survey concerning the environmental literacy of adults in Minnesota. During July-September 2001, a random sample of 1000 adults were surveyed for their knowledge about, attitudes toward, and behaviors related to the environment. This report describes the environmental literacy of Minnesotans and compares Minnesotans' literacy on related survey questions to that of Pennsylvania residents and other United States citizens. The report is divided into four parts. The first three sections discuss the survey in terms of knowledge, attitudes, and behaviors while the final section offers an integrated perspective on the overall report and Minnesota adults' environmental literacy. (KHR)

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The Minnesota Report Card on Environmental Literacy

A benchmark survey of adult environmental knowledge, attitudes and behavior

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For additional information on this survey, check out the SEEK web site: mnseek.net

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Executive Summary

As with all states and countries, Minnesota and its citizens are facing a number of important environmental issues. To be able to solve these issues, Minnesota needs an environmentally literate citizenry – one that has knowledge about and attitudes toward the environment and the issues, which in turn may affect behaviors related to the environment. As we enter the 21st century, it is an appropriate time to collect information about the environmental literacy of Minnesota's citizens.

The Minnesota Report Card on Environmental Literacy documents the results of the first statewide survey concerning environmental literacy of adults in Minnesota. During July through September 2001, a random sample of 1,000 Minnesota adults was surveyed for its knowledge about, attitudes toward, and behaviors related to the environment. This report not only describes the environmental literacy of Minnesotans, but also compares Minnesotans' literacy on related survey questions to that of Pennsylvania residents and United States citizens.

The report is divided into four parts. The first three discuss specific sections of the survey: knowledge, attitudes, and behaviors. The final section offers an integrated perspective to the overall report and to Minnesota adults' environmental literacy.

It is important to remember that this survey and report are not an evaluation of the public, but rather a collection of baseline information concerning the knowledge about, attitudes toward, and behaviors related to the environment in Minnesota. This baseline will be used to track trends and changes in environmental literacy as Minnesota adults are surveyed again at various points in the future.

Environmental knowledge

To collect data about environmental knowledge, adult Minnesota residents were asked two sets of questions – general environmental knowledge and knowledge of urban sprawl issues – to determine what they ***actually know*** about the environment.

Almost 65% of Minnesota adults *believe* that they are knowledgeable about environmental issues and problems, yet only 36% of the state's adults have an above-average knowledge about the environment, answering correctly five or more of the eight general environmental knowledge questions. Only 10% received an A grade, answering seven to eight questions correctly.

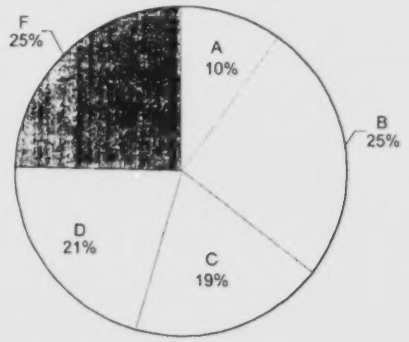
General environmental knowledge

Based on the eight general questions, 55% of Minnesotan adults have at least an average or basic knowledge about the environment, which means that almost 46% of the state's adults have a below average knowledge about the environment. A score of four or more questions is used as a measure of average or basic knowledge. The sidebar opposite shows how Minnesotans scored on the general knowledge portion of this survey.

When compared to four knowledge questions that were also used in the United States and Pennsylvania surveys, it is clear that Minnesota adults either equaled the knowledge levels of U.S. citizens and Pennsylvania residents or scored significantly higher.

How did Minnesotans score?

Based on the eight general environmental knowledge survey questions, here's how Minnesotans scored. (A = 7-8 correct; B = 5-6 correct; C = 4 correct; D = 3 correct; F = 0-2 correct)



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In fact, on three of the questions (electricity generation, non-point source pollution, and renewable resources) Minnesotans scored significantly higher than the national average.

Knowledge of urban sprawl

Minnesotans were also asked a series of questions to examine their knowledge of urban sprawl and related issues. Questions ranged from development of infrastructure (sewer systems and roads) and driving time to farmland and wildlife issues. Overall, Minnesota adults show a high knowledge of urban sprawl issues. The percentage of respondents answering the knowledge questions correctly was over 70% in all cases.

Sources of Minnesotans' information

Minnesota residents use the television, newspapers, environmental learning centers (ELCs), and environmental groups to get "a lot" of information about the environment. Thirty-six percent of Minnesota adults report using the Internet to access environmental information. Sixty-eight percent of Minnesotans rely on their own training or education for information.

It is interesting to note that in the midst of this mass media, Minnesota adults use ELCs as a source of environmental information. This may be the result of Minnesota's network of high quality residential environmental centers, nature centers, state and metro parks, museums, and zoos.

Attitudes toward the environment

In addition to what Minnesotans know about the environment, the survey also asked questions designed to examine what they believe about certain environmental issues.

Laws and regulations

Overall, few Minnesota residents believe that environmental laws have gone "too far" – only 15% or fewer gave such a response for the questions in the attitude section of the survey. The responses to laws and regulations on specific environmental issues show that Minnesotans consider water pollution to be extremely important and an area not safeguarded enough. More protection of wild areas and wetlands is seen as important, 43% and 40% respectively, although almost 40% of those surveyed believe that the correct balance of regulation is met for these environmental areas. Minnesotan adults do not seem to make the connection between the value of natural areas and wetlands in helping water quality, though 41% of those surveyed did know that wetlands are important for cleaning or filtering water.

It is interesting to note that air pollution is seen as also requiring more regulations, but the difference between not enough laws and the correct balance of regulation is less than 4 percentage points, compared to the same statements for water pollution where the difference is almost 46 percentage points.

Genetically modified organisms

Thirty-three percent believed that GMOs were bad for the environment while 12% of adults responded that they were good. Almost 44% of Minnesota adults had not thought about genetically modified organisms (GMOs) or didn't know if there was an impact, good or bad, on the environment, although the topic certainly has garnered more media attention in 2000 and 2001.

Choosing where to live

Minnesota adults reported that personal safety and community/green space are the most important factors for choosing where to live. Property taxes, however, seem to be more important than quality of schools to Minnesotans. Living on a larger lot and distance to work were less likely to factor in this decision.

Attitudes toward environmental education

The majority of Minnesotans (90%) want schools to provide environmental education. Over 52% of Minnesota adults believe that environmental education should be financed through a special state fund created specifically for this educational activity.

This support is not surprising given the interest of residents in providing quality education to the state's children, and not significantly different from the Pennsylvania and national surveys.

Environmental behaviors

A majority of Minnesotans frequently conserve energy (89%); service their vehicles regularly (87%); recycle glass, paper, and cans (80%); conserve water (58%); and cut down on creating garbage (55%). The top two activities are very much related to actions that save money, i.e., cutting down on electricity bills or avoiding costly car repairs. Do Minnesota adults consciously take such actions to help the environment – or do they do these things to save money? While this may be difficult to answer, the end result is that the environment benefits from reduced electricity generation and more fuel-efficient cars.

Significantly fewer adults (58%) indicated that they conserve water by turning off water when brushing their teeth. Considering the knowledge and concern of Minnesotans on water issues, it is somewhat surprising that the percentage of adults who conserve water in this way is this low. Nineteen percent of Minnesota adults reported that they frequently use other types of transportation, such as walking, biking, riding the bus, or carpooling instead of driving. In addition, 80% of residents consider a candidate's record on the environment at least some of the time when voting.

Almost half of Minnesota residents do not use chemicals in their yards and gardens. The number of Minnesotans (46%) who never use chemicals in the yard is encouraging, as is the low number of people (5%) who frequently use chemicals in their yards. On a national level, only 36% of U.S. residents frequently avoid using chemicals in gardens, considerably lower than the Minnesota level.

Paying more for gasoline to help improve the environment

Seventy-three percent of Minnesota adults reported they would be willing to pay extra for gas if they knew that the additional money would significantly improve the environment. On average, Minnesota adults would be willing to pay up to 18¢ extra per gallon.

Demographics considerations

Survey data were analyzed based on a number of demographics. Males scored higher than females in all their responses to the general environmental knowledge questions, a finding consistent with the Pennsylvania and national surveys. However, females have a more positive attitude toward the environment compared to males. Age, location, income, and education are important factors in various areas of knowledge, attitude, and behavior.

Environmental literacy: Integrating knowledge, attitudes, and behavior

It is clear from the results of this survey that a connection exists between environmental knowledge and the self-reported attitudes and behaviors of Minnesotans. Respondents who received a higher grade in general environmental knowledge were significantly more likely to have a positive attitude toward the environment and to engage in more positive environmental behaviors. So, while increased environmental knowledge may help to create a more positive environmental attitude, it also may assist in the creation of change in behaviors. The data suggest that in addition to environmental knowledge, other factors such as convenience and economics may come into play in the creation of environmentally sensitive behaviors.

Given that almost half the adults in the state (46%) have a less-than-average general knowledge about the environment, the fact that 68% of Minnesotans rely on their own training or education for information may not be beneficial to solving environmental issues or encouraging environmental behaviors. If residents are to rely on their own education and be able to critically analyze information and its sources, as well as become involved in solving environmental issues, it is essential that opportunities are provided for people to receive environmental education in various settings during their K-12 education experience and throughout their lifetimes. Agencies and institutions may want to consider increasing and focusing outreach to students and adults to provide these opportunities.

It is envisioned that this survey and report card will become a long-term project, enabling trends in environmental knowledge, attitudes, and behavior to be tracked.

Introduction

As with all states and countries, Minnesota and its citizens are facing various environmental issues. To be able to solve these issues, Minnesota needs an environmentally literate citizenry -- one that has knowledge about and attitudes toward the environment and the issues, which in turn may affect behaviors related to the environment. As we enter the 21st century, it is an appropriate time to collect information about the environmental literacy of Minnesota's citizens.

This report is available on the following web sites: Sharing Environmental Education Knowledge mnseek.net) *and Hamline University's Center for Global Environmental Education* (cgee.hamline.edu).

The Minnesota Report Card on Environmental Literacy documents the results of the first statewide survey concerning environmental literacy of adults in Minnesota. Minnesota adults were surveyed for their knowledge about, attitudes toward, and behaviors related to the environment.

This report not only describes the environmental literacy of Minnesotans, but also compares Minnesotans' literacy on related survey questions to that of Pennsylvania residents and United States citizens. These comparisons are based on a similar studies performed by Pennsylvania and nationally.

Survey instrument

From July through September, 2001, a random sample of 1,000 adult Minnesotans were posed a series of questions in a telephone survey conducted by the Wilder Research Center in St. Paul, Minnesota. A copy of the entire survey is available in Appendix A. See Appendix C for the final frequencies of responses to each individual question.

The Minnesota environmental literacy survey was developed through a series of meetings with members of the working group (see Acknowledgements page). The survey instrument includes questions from various *National Report Cards on Environmental Knowledge, Attitudes and Behaviors* (referred to as *National Environmental Report Cards* in this report) conducted by the National Environmental Education Training Foundation and Roper Starch Worldwide, as well as questions from *The First Pennsylvania Environmental Readiness Report for the 21st Century Survey Report* (referred to as *Pennsylvania Environmental Report Card*) conducted by the Pennsylvania Center for Environmental Education. Questions were also developed specifically for this survey.

Data analysis

Data from the survey interviews were analyzed using frequencies of occurrence and Pearson Chi-Square test of statistical significance. The Pearson Chi-Square tests the relationship between two variables and reports statistical significance. One set of variables in this report is the demographics, while the other set is the questions in the survey.

Organization and purpose of report

The report is divided into four parts. The first three discuss specific sections of the survey: knowledge, attitudes, and behaviors. The final section offers an integrated perspective to the overall report and to Minnesota adults' environmental literacy.

It is important to remember that this survey and report are not an evaluation of the public, but rather a collection of baseline information concerning the knowledge about, attitudes toward, and behaviors related to the environment in Minnesota. This baseline will be used to track trends and changes in environmental literacy as Minnesota adults are surveyed again at various points in the future.

Part 1

Environmental Knowledge

To collect data about environmental knowledge, adult Minnesota residents were asked two sets of questions – in all, 14 fact-based questions – to determine what they ***actually know*** about the environment. The first set was an eight-question environmental literacy test (Questions 3-9). The objective of these general environmental questions was to identify what Minnesotans ***actually know*** about the environment. The remaining six questions deal with the specific issue of urban sprawl (Questions 11A-E and 12).

General environmental knowledge

Minnesotans were first asked eight general multiple-choice questions, dealing with topics ranging from air and water pollution to electricity generation and landfills. Respondents had the option of selecting from four possible answers with only one being correct. They could also say that they did not know the answer. A number of these questions had been used in varying configurations in the Pennsylvania survey and some of the national surveys.

Based on the eight general knowledge questions, 55% of Minnesota adults have at least an average or basic knowledge about the environment. A score of four or more questions is used as a measure of average or basic knowledge. Note that only 10% of the state's adults have an excellent knowledge about the environment, answering seven or more questions correctly. On the other hand, this means that almost 46% of the state's adults have a below average knowledge about the environment. In fact, out of the 1,000 people surveyed, 2.4% answered all eight questions *incorrectly*.

Figure 1 (opposite) shows how Minnesotans scored on the general knowledge portion of this survey. Future surveys will track changes in the level of knowledge.

The Minnesota Report Card on Environmental Literacy replicated four knowledge questions that were also used in numerous *National Environmental Report Cards* and in the *Pennsylvania Environmental Report Card*. While this makes direct comparisons difficult on a group level, comparisons can certainly be made on individual questions. Figure 2 compares the individual questions used in four surveys.

Figure 1. How did Minnesotans score?

Based on the eight general environmental knowledge survey questions, here's how Minnesotans scored. (A = 7-8 correct; B = 5-6 correct; C = 4 correct; D = 3 correct; F = 0-2 correct)

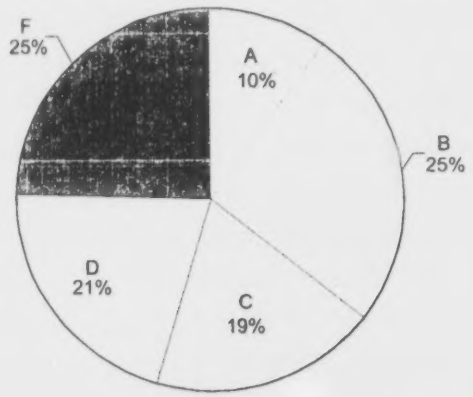

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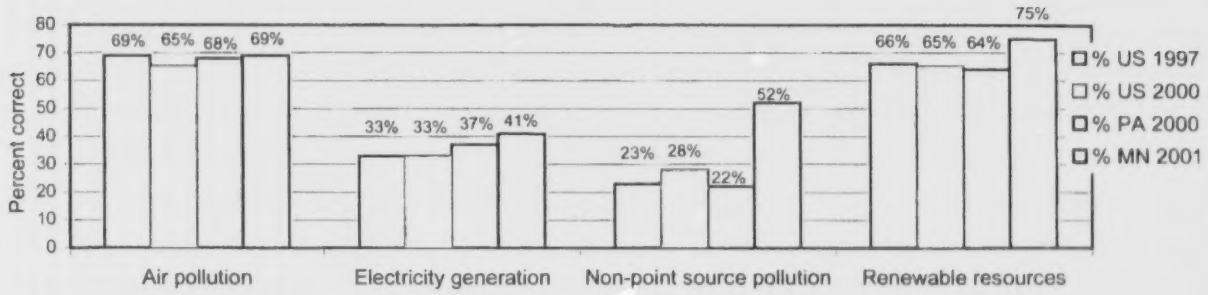
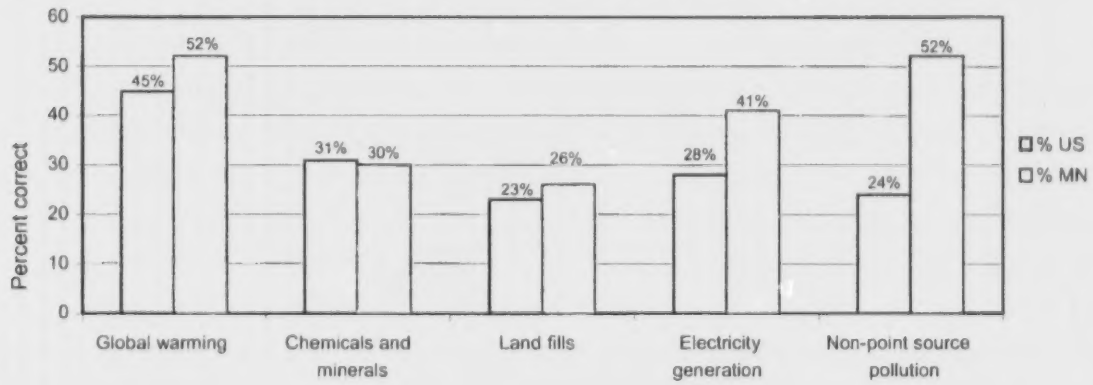
Figure 2. Comparison of scores on four general knowledge questions



Of the four knowledge questions that were used in the United States, Pennsylvania, and Minnesota surveys, it is clear that Minnesota adults either equaled or scored significantly higher than the knowledge levels of U.S. adults and Pennsylvania residents. In fact, on three of the questions (electricity generation, non-point source pollution, and renewable resources), Minnesotans scored significantly higher than the national average (8, 24, and 10 percentage points respectively). (For direct comparisons of frequencies, a difference of 5 percentage points is considered significant.) When compared to the Pennsylvania Environmental Report Card, Minnesota residents scored significantly higher (30 and 11 respectively) on the questions of non-point source pollution and renewable resources.

Using a 1999 National Environmental Report Card, interesting comparisons can also be made. Figure 3 compares the results from the 1999 National Environmental Report Card and those of Minnesota residents using the same five general knowledge questions. In the case of three questions (global climate change, electricity generation, and non-point source pollution) Minnesota residents scored significantly higher than the national average by 7, 13, and 28 percentage points respectively. A similar trend is seen for the responses to the questions on electricity generation and non-point source pollution in the *National Environmental Report Card 2000.*

Figure 3. Comparison of scores on five general environmental knowledge questions



Knowledge of electrical generation

Figure 4 compares the survey responses on the question of how electricity in the U.S. is generated (Question 8). It is clear that many Minnesota residents (41%) know that most of the electricity in the U.S. is generated through the combustion of fossil fuels, a significantly higher percentage than that of the U.S. population and a little higher than that of Pennsylvanians.

Figure 4. Comparison of responses on question about electricity generation

How is most of the electricity in the U.S. generated? Is it...	Actual % of generation	U.S. (1999)	U.S. (2000)	PA (2000)	MN (2001)
By burning fossil fuels such as coal, oil	71% (coal 52%, gas 16%, oil 3%)	28%	33%	37%	41%
With nuclear energy	20%	14%	12%	19%	15%
Through solar energy	<1%*	4%	2%	3%	1%
At hydroelectric power plants	7%	37%	39%	30%	32%
Don't know		18%	13%	10%	11%

**U.S. electricity generation for other sources (including renewables such as solar, wind, etc.) is 2%. (Department of Energy web site, http://www.eia.doe.gov/cneaf/electricity/epav1/elecprod.html and Minnesotans for an Energy Efficient Economy, www.me3.org)*

It is interesting to note that over 30% of U.S. citizens, Minnesotans, and Pennsylvania residents *incorrectly* believe that hydroelectric power plants generate most of the electricity in the United States. Why over a third of respondents in all surveys think that hydroelectric power plants play such a large role in U.S. electricity production is puzzling.

Knowledge of landfill material

According to the U.S. EPA's Office of Solid Waste, nationally about 55% of municipal solid waste (MSW) was disposed of in landfills during 2000. In order to examine what Minnesotans know about waste, the survey asked participants about landfill materials (Question 10). It is interesting that while 26% responded correctly that the greatest source of landfill material is paper products, 30% believed it to be disposable diapers, 28% glass, plastic, aluminum and steel, and 6% believed it to be organic materials such as lawn and garden trimmings (See Figure 5 below).

The belief that disposable diapers consume so much landfill space is probably the result of a misconception or environmental myth concerning this product. The percentage for glass, plastic, etc. is also large considering that almost 95% of Minnesota adults report that they frequently or sometimes recycle these products as well as paper (see *Part 3, Environmental Behaviors*). Comparing Minnesota's results with the 1999 *National Environmental Report Card*, it is clear that the scores of U.S. citizens and Minnesotans are not significantly different for any of the responses.

What is going into our landfills?

Even though 30 percent of Minnesotans surveyed believed that disposable diapers are the greatest source of landfill materials, the U.S. EPA estimates that only 3.3 tons of disposable diapers were discarded in 2000, that is, only 1.4% of all MSW.

paper products	*29%*
plastic	*14%*
yard clippings	*7%*
glass	*6%*
aluminum cans	*1.4% (total metals 7%)*
disposable diapers	*1.4%*

U.S. EPA web site: http://www.epa.gov/epaoswer/non-hw/muncpl/report-00/report-00.pdf

Figure 5. Comparison of responses on question about landfill material

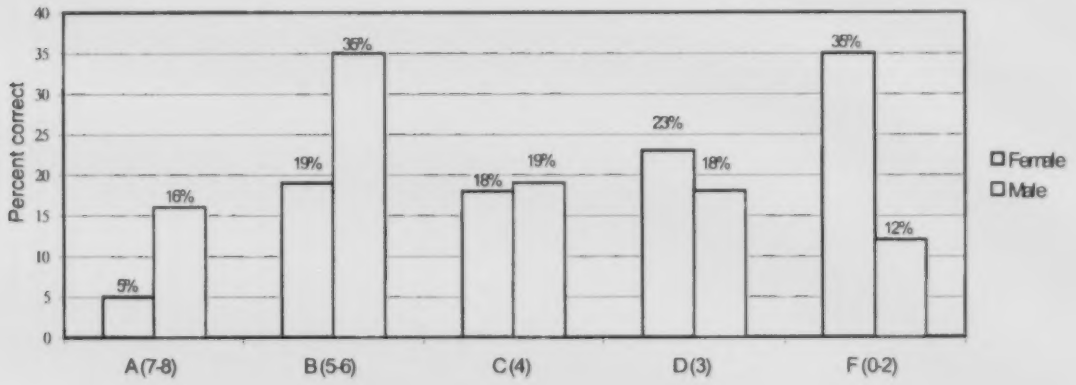
What is the greatest source of landfill material? Is it...I	U.S. citizens (1999)	MN residents (2001)
Disposable diapers	28%	30%
Lawn and garden clippings, etc.	8%	6%
Paper products	23%	26%
Glass, plastic, aluminum, steel	28%	28%
Don't know	12%	10%

Demographics

The respondents to the survey were divided according to specific demographics to allow for analysis of the data (Questions 20-31). The demographics selected were gender, age (18-34, 35-44, 45-64, and 65 and over), education (college degree, some college, high school), location (7-county metro, other metro areas in the state, non-metro) and income ($30,000 or less, $30,000-$50,000, $50,000-$75,000, and over 75,000, These demographics were also used in the other national and Pennsylvania report cards. The Pearson Chi-Square determines a statistical relationship between two variables, in this case demographics and the questions.

Gender. In relation to demographics for the eight general knowledge questions, significant differences were determined for all eight questions. Males scored consistently and significantly higher than females (Figure 6). Interestingly, 45% of females believed incorrectly that most of the electricity generated in the U.S. is at hydroelectric power plants, while only 25% of males supposed this to be the case. With the question concerning waste, 38% of males answered correctly that paper products are the greatest source of landfill material, while only 22% of females responded correctly. Furthermore, 42% of females incorrectly believed that the largest source of landfill material is disposable diapers, whereas only 20% of males supposed this to be the case.

Figure 6. Comparison of responses of Minnesota females and males on eight general questions



If the four knowledge questions common to the three surveys (U.S., Pennsylvania, and Minnesota) are examined, in Minnesota's survey (see Figure 7) significant differences were seen between male and female responses, the lowest difference being 3% and the highest being 28%. The latter is a high gender gap. However, it is consistent with the results of *Pennsylvania Environmental Report Card* and previous *National Environmental Report Cards* (1997, 1998, 1999, 2000).

Figure 7. Correct responses of Minnesota females and males to four general environmental knowledge questions

	Percentage of correct responses	
	Female	Male
Air pollution	71%	77%
Electricity generation	33%	61%
Water pollution	48%	69%
Renewable resources	83%	86%

Age. Significantly, the largest differences exist between the 65 and over age group and the younger three age groups. Only 3% of respondents 65 and over received an A grade, while 33% received a failing grade, the highest of any age group. Eleven percent of Minnesota adults in the 18-34 age group received an A grade and 27% got a B. Nine percent of those adults in the 35-44 age group received an A, while 26% received a B. Respondents who received an A grade (12%) or a B grade (29%) were more likely to have graduated from college and be predominantly in the 45-64 age group.

It is not surprising that residents now aged 45 to 64 are more environmentally knowledgeable. They were 30 years younger when the environmental movement flourished with the foundation of Earth Day and created a new awareness about the need to preserve and maintain the environment. It was also during the late sixties and early seventies that much of the environmental legislation, policy, and education was formulated and enacted both nationally and at the state level. Since then, environmental legislation, policy, and education have continued to be important issues in society, so younger residents (ages 18-34 and 35-44) have been exposed to these issues as well.

Education. Level of education is important in responding correctly to the knowledge questions in the survey. Residents with a college degree (bachelor's degree or above) scored significantly higher than those with either some college or a high school education. Fifteen percent of those with a college degree or above received an A grade, compared to 8% and 4% for those with some college education and high school, respectively, and a similar pattern exists for the B grade. Of those with a college education, only 15% got a failing grade, compared to 24% and 37% for those with some college education and high school, respectively.

Location. Location did not seem to make a significant difference for general environmental questions.

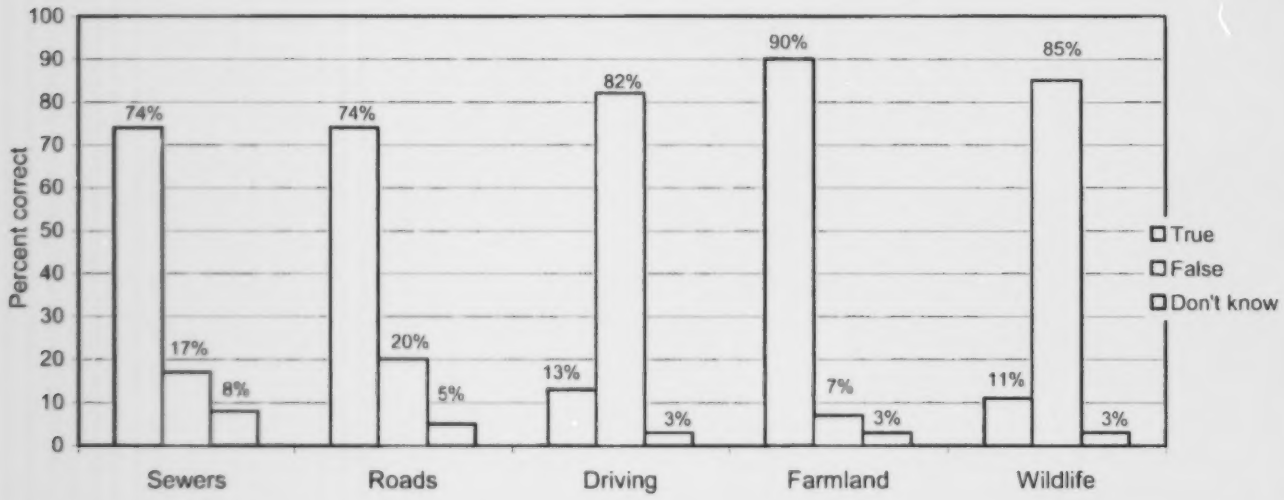
Income. A significant difference was found among income levels for the set of eight general questions. Generally respondents with a higher income answered more questions correctly than incorrectly compared to the lowest income group. For example, residents with an income of over $75,000 scored significantly higher than the other income groups: 35% of respondents in this group received a B grade while only 17% of adults earning $30,000 or less received a B. Twenty-nine percent of respondents in the other income groups ($30,000-$50,000, $50,000-$75,000) received a B grade.

Knowledge of urban sprawl

In the second set of environmental knowledge questions, (Questions 11A-E and 12), Minnesota adults were specifically asked to examine their knowledge of urban sprawl and related issues. Five of the questions (true/false) ranged from development of infrastructure (sewer systems and roads) and driving time to farmland and wildlife issues. The questions about driving and wildlife were asked in a negative format, with false being the correct answer.

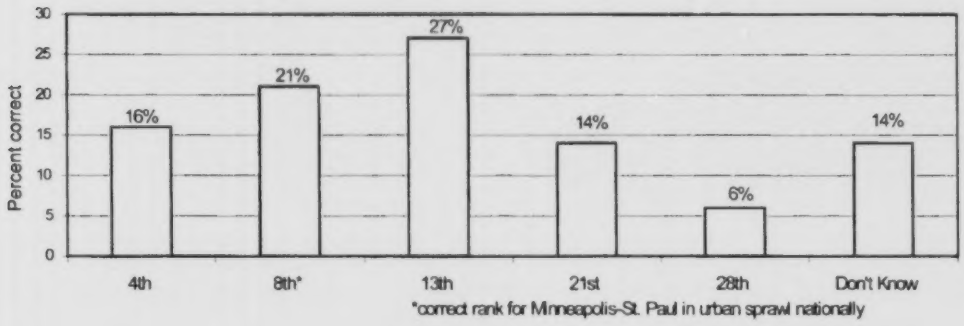
The percentage of respondents answering the knowledge questions correctly was very high, over 70% in all cases (Figure 8). Overall, Minnesota adults show a high knowledge of urban sprawl issues, although it is interesting to note that almost 8% of the respondents did not know any of the impacts of sprawl.

Figure 8. Minnesotans' knowledge of issues related to urban sprawl



The final question asked adults if they knew the urban sprawl ranking of Minnesota's largest urban area, Minneapolis-St. Paul, based on a survey of 30 urban areas nationally. Twenty-one percent of the respondents ranked the urban area correctly (Figure 9), according to a 1998 Sierra Club report, *Sprawl: The Dark Side of the American Dream,* on urban sprawl which ranked the Twin Cities as the 8th most sprawl-threatened city with a population of 1 million or more. Forty-seven percent of Minnesota residents incorrectly believed that the Minneapolis-St. Paul urban area was ranked lower in sprawl, while 16% believed that it was ranked higher in sprawl. When the residents who incorrectly ranked Minneapolis-St. Paul as the fourth most sprawled are combined with those who answered correctly that Minneapolis-St. Paul ranks as the eighth, it is clear that 37% of Minnesota adults believe that the Twin Cities is sprawling. Regardless of the correct answer, the fact that only 14% did not know the Minneapolis-St. Paul area is sprawling is positive.

Figure 9. Minnesota adults' ranking of Minneapolis-St. Paul for urban sprawl nationally



According to a 1998 Sierra Club report, "between 1982 and 1992, Minnesota lost 2.3 million acres of farmland to development." – Sprawl: The Dark Side of the American Dream *(www.sierraclub.org/sprawl/report98/minneapolisstpaul.asp)*

Demographics

Gender. The gender gap is not as large and is not significant for each of the knowledge questions in this set as in the previous set of questions. This may be the result of respondents having direct experience with urban sprawl, such as traffic congestion in urban areas and on highways, and because sprawl has been a prominent environmental issue in the mass media.

Age. Significant differences among age groups are reported for all questions except those concerning loss of farmland and increasing the variety of wildlife. The age group 65 and over scored higher than all other groups, knowing that urban sprawl increases the expense of developing infrastructure (municipal sewers and roads). However, this group scored between 10 and 15 percentage points below the other groups on the question of time spent driving. Minnesota residents aged 65 and over may not spend as much time driving or in traffic as they did when they were younger, and so it is logical that they would score lower on this question.

Education. Education level seems to have an impact on the responses to questions about urban sprawl. Significant differences were found in scores for the questions dealing with time spent driving and wildlife. Twenty-four percent of those adults with high school education incorrectly believed that urban sprawl helped people spend less time driving, compared to 14% of those with some college education and only 6% of those with a college degree. In relation to wildlife, 17% of those with a high school education incorrectly believed that urban sprawl helped increase the variety of wildlife compared to 10% of those with some college education and 9% of those with a college degree.

Location. A respondent's location (defined as seven-county metro, other metro areas in the state, and non-metro areas) did not seem to have any major influence on scores in this set of questions except on time spent driving and loss of farmland. Almost 90% of Minnesota adults in the seven-county metro area believe that people spend more time driving because of urban sprawl. Only 81% of adults in other metro areas believe this to be the case, while 83% of non-metro residents responded correctly that sprawl does result in more time spent driving. Location did not have any influence on the ranking of Minneapolis-St Paul correctly for urban sprawl. Almost double the number of respondents (10%) in the seven-county metro area believed that urban sprawl did not result in loss of farmland, compared to those in other areas.

Income. Income levels also showed little variation in the answers to these questions except in the case of time spent driving, loss of farmland, and increasing variety of wildlife. Respondents earning $30,000 or less scored significantly different from the other income levels. For example, 28% of this group incorrectly believe that urban sprawl helps people spend less time driving, scoring significantly

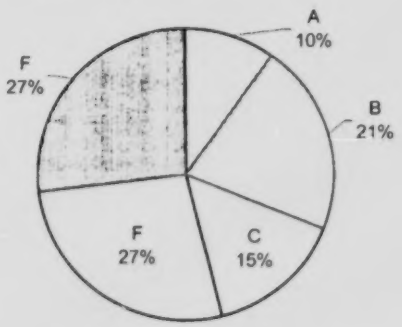
higher (between 14 and 22 percentage points) than the other income brackets. Twenty-one percent of this group incorrectly believe that urban sprawl increases the variety of wildlife and 12% incorrectly believe that urban sprawl does not result in loss of farmland. For the question ranking Minneapolis-St. Paul's urban sprawl, there was no significant difference among the respondents in the four income brackets.

Overall knowledge scores of Minnesota residents

Figure 10 shows the combined knowledge scores for the two sets of questions (all 14 environmental knowledge questions). Forty-six percent of Minnesota adults have at least an average environmental knowledge level, answering nine or more questions correctly. However, 54% of Minnesota adults have a below-average environmental knowledge, as compared to 46% of adults who have a below-average score for the first set of eight general environmental knowledge questions.

Figure 10. Overall knowledge scores for Minnesotans

For the combined questions, the following grading system was developed: A = 12-14 correct; B = 10-11 correct; C = 9 correct; D = 7-8 correct; F = 0-7 correct



Demographics

When the demographics are examined for the 14 environmental knowledge questions, significant differences were found for most of the variables.

Gender. The gender gap is similar to that of the smaller set of eight questions, with males scoring significantly higher than females.

Age. For age groups, a significant pattern emerged as with the previous set of eight questions. If the responses for grades A and B are combined into a new rating, then only 20% of adults aged 65 and over received this new rating, while 33% and 38% of those aged 18-34 and 45-64 respectively received the same rating. Only 26% of adults aged between 35-44 received this rating.

Education. In relation to education levels, those Minnesota adults who have graduated from college scored significantly higher, answering ten or more questions correctly, than respondents who had not attained this level of education. Fewer college graduates received an F grade than those who had some college or high school education.

Income. As with the first set of eight questions, adults in the higher income bracket were more likely to receive a B grade.

Location. Location was not a significant factor for this set of 14 questions.

Self-reported knowledge of environmental issues

Minnesota adults were asked how much they themselves feel they know about environmental issues and problems (Question 1). Responses ranged from "a lot," "a fair amount," "only a little," or "practically nothing."

Combining the categories "a lot" and "a fair amount" to represent a higher level of self-reported knowledge about environmental issues, and "only a little" and "practically nothing" to represent a self-reported *lack* of knowledge about issues, it can be seen that almost 65% of Minnesotans believe that

they are knowledgeable about these issues. Yet only 10% received an A grade on the environmental knowledge questions.

In the most recent *National Environmental Report Card (2000)*, 70% of U.S. citizens believed that they were knowledgeable about environmental issues but only 10% actually received an A grade, answering 11 to 12 of the knowledge questions used in that survey correctly. Even though Minnesota adults scored lower on self-reported knowledge of environmental issues than the national level, 31% of Minnesotans actually had an above-average knowledge score on the 14 general environmental knowledge questions.

Demographics

Gender. Significantly, 77% percent of males believed that they were knowledgeable about environmental issues, but only 56% of females believed that they were knowledgeable about these issues. This lack of knowledge about environmental issues may reflect the gender gap in the eight general environmental knowledge questions, where 51% of males and only 24% of females answered five or more questions correctly.

Age. Interestingly, differences are not significant across the age groups for this question. Sixty-nine percent of respondents in the 45-64 and the 65 and over age groups believed they were knowledgeable about environmental issues, compared to 59% for those in the remaining age groups.

Education. Education is a significant factor in respondents' beliefs about their knowledge of environmental issues. Seventy-five percent of respondents who have graduated from college reported that they were knowledgeable about the environment, as opposed to 66% for those with some college education and 51% for those who had a high school education or less. Sixteen percent of college graduates reported that they knew "a lot" about environmental problems and issues compared to 9% for those with some college and 8% for those with high school education or less.

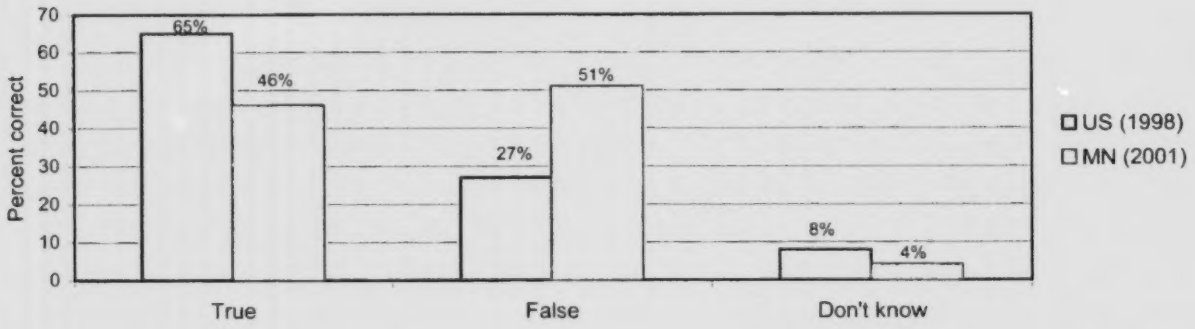
Location. A significant difference was not found based on location for this question.

Income. Significantly, more respondents in the higher income bracket than any other group believed that they are knowledgeable about environmental issues and problems. The percentage of adults who reported that they had environmental knowledge increased for each income group, from 54% for those earning $30,000 or less to 75% for those earning $75,000 or more. This pattern is also followed for the number of adults in these income groups that received a B grade or higher grade in environmental knowledge.

Belief in environmental myths

Participants of the survey were asked a true-false type question (Question 14) about an environmental myth concerning the testing of industrial and household chemicals by a government agency. Almost 51% responded correctly that industrial and household chemicals are *not* routinely tested and approved by a federal agency, while 45% assumed the statement to be true and 4% did not know. According to the 1998 *National Environmental Report Card*, which also used this question, 27% of U.S. citizens answered correctly. Again, Minnesota residents scored significantly higher than the national average (Figure 11).

Figure 11. Comparison of U.S. and Minnesota scores for environmental myth question



Demographics

Gender. Significantly, 58% percent of females responded correctly to this question, whereas only 46% of males knew that most industrial and household chemicals are not routinely tested and approved by a federal agency. This may be a result of a higher concern expressed by females over males with human and environmental health issues as shown in *Part 2, Environmental Attitudes*

Age. Significantly, 61% of those in the 45-64 age group answered this question correctly, more than any other age group. Fifty-six percent of the respondents in the 65 and over category, 52% in the 35-44 category, and finally 38% of those in the 18-34 age category answered this question correctly.

Education. Significantly, over half (59%) of the adults with a college degree answered this question correctly, while 54% of those with some college education and 44% of those with a high school education or less answered it correctly.

Location. Location of the respondents seemed to have no influence on the question.

Income. Income does not seem to be a significant factor in the response to this question.

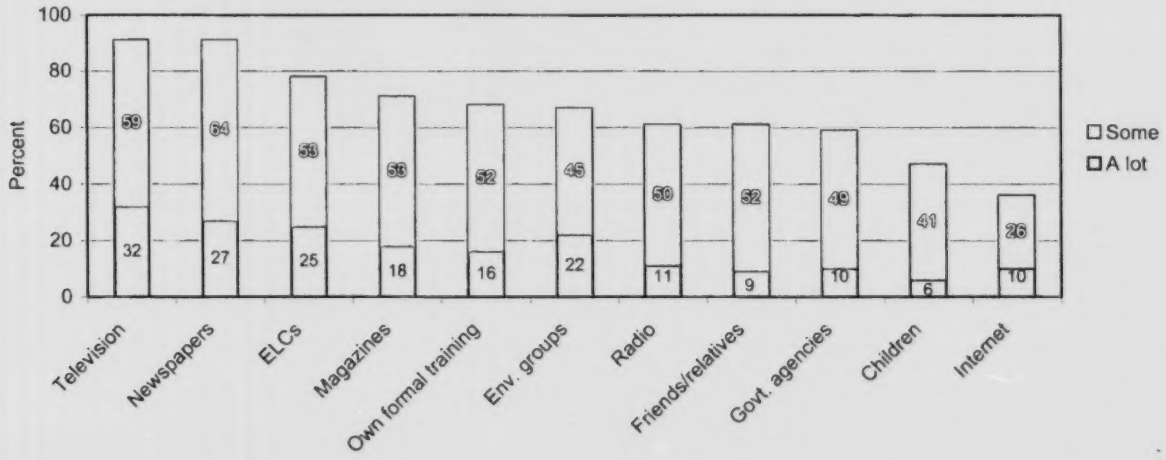
Sources of Minnesotans' environmental information

Minnesota residents were asked where they obtain information about the environment (Questions 16A-K). A number of information sources were listed, such as friends and relatives; newspapers; magazines; television; radio; government agencies; Internet; environmental groups; children; own training/education; and environmental learning centers (residential environmental learning centers, nature centers, state and metro parks, museums, and zoos). Respondents were given the option of answering "a lot," "some," or "no information." They could also answer "don't know."

The four sources that Minnesota residents reported using "a lot" for information about the environment are television, newspapers, environmental learning centers (ELCs), and environmental groups. While the use of mass media for getting information is not surprising, it is interesting to note that Minnesota residents use ELCs (25%) and environmental groups (22%) to obtain a lot of information. ELCs may be used to get a lot of information because Minnesota has an extensive network of high quality residential environmental centers, nature centers, state and metro parks, museums, and zoos.

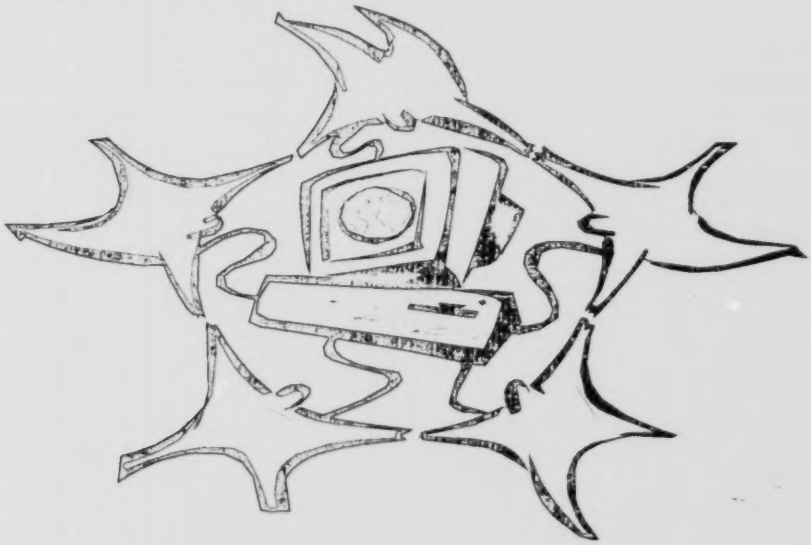
If the two information categories (a lot and some) are combined (see Figure 12), then the ranking of the sources changes slightly – TV and newspapers are both 91%, ELCs is 77%, and environmental groups is 67%. However, at 71%, magazines become more important than environmental groups. Thirty-six percent of Minnesota adults report using the Internet to access environmental information. (See *Connecting people with environmental information through the Internet*, p. 13)

Figure 12. Combined sources of environmental information used by Minnesotans



Another interesting result is that 68% of Minnesota residents rely on their own training or education for information. Given the fact that just over half the adults in the state (55%) have an average general knowledge about the environment, such reliance on existing knowledge may not be beneficial to solving environmental issues or encouraging environmental behaviors. This also highlights the need for environmental education in the K-12 education system. If residents are to rely on their own education and be able to critically analyze information and its sources, as well as become involved in solving environmental issues, it is essential that opportunities are provided for people to receive environmental education in the K-12 education system and throughout their lifetimes. Agencies and organizations may want to consider increasing outreach to adults and K-12 students to provide these opportunities.

Connecting people with environmental information through the Internet



Minnesota is considered a highly "connected" state with 56% of homes connected to the Internet (versus 50% nationally).[1] According to the *Minnesota Report Card on Environmental Literacy* over a third (36%) of Minnesota adults are accessing the Internet for environmental information. This number is very significant and encouraging considering that more than ever, environmental organizations, government, and state agencies are relying on the Internet to distribute information.

In 2001, the Pew Internet and American Life Project[2] surveyed Americans who go online and asked what they do there. On an average day, 64 million Americans go online and do various tasks from sending e-mail to visiting government sites. Outside of sending and receiving e-mail (54%), the online activity most reported was reading news (26%), while 5% visit government web sites.

However, before organizations and agencies rush headlong to place all their information online, it is important to consider that while computers are now commonplace and the Internet has been in existence for over a decade, to many people, this technology is still a new and uncomfortable realm and they may prefer to rely on traditional sources for environmental information.

For instance, there is a significant difference in the age groups who use the Internet "a lot" and "some" for information. The highest being the 18-34 age group (48%) declining steadily to 11% for 65 and over. Significantly 49% of those with a college degree use the Internet for information compared to 36% of those with some college education and 23% of those with a high school education. Income levels also show a significant difference – 51% of those earning $50,000 to $75,000 (the highest of any income level) use the Internet, while those earning $30,000 or less use it the least (18%) of all income levels. Having access to the technology itself is another issue, not in the scope of this survey. Interestingly, gender and location are not significant factors with this technology.

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[1] "A Nation Online: How Americans Are Expanding Their Use of the Internet." Published by the National Telecommunications and Information Administration and the Economics and Statistics Administration. The report is based on the September 2001 U.S. Census Bureau's Current Population Survey. http://www.ntia.doc.gov/ntiahome/dn/index.html.

[2] Pew Internet and American Life Project, Daily Internet Activities, 2001. http://www.pewinternet.org/reports/chart.asp?img=Daily_Internet Activities.jpg

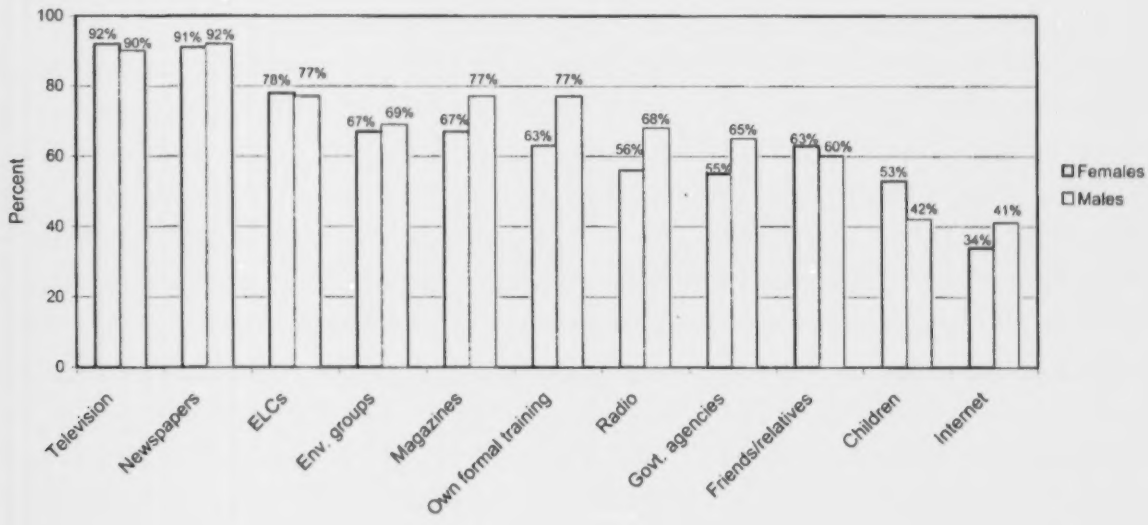
Demographics

Gender. The gender gap for sources of environmental information is not as large as that of environmental knowledge itself, although males and females do report preferences for different sources (Figure 13). Males and females report using TV, newspapers, ELCs, and environmental groups almost equally. However, males seem to rely more on magazines and their own training and education, rather than radio, government agencies, and friends and relatives for environmental information. Males tend to rely equally on children as they do on the Internet for information.

On the other hand, females rely more on magazines and environmental groups than friends and relatives, and their own training and education. They rely less on radio, government agencies, children, and finally the Internet as sources of environmental information.

A significant difference between genders is visible in their reliance on various information sources. For example, females do not rely on their own training and education as much as males, possibly because they believe that they do not know as much about environmental issues. In addition, females rely more on children for information than government agencies, radio and magazines, while males rely more on government agencies, radio and magazines.

Figure 13. Sources of environmental information for Minnesota females and males



Location. Adults in various areas of the state use all of these sources to obtain information about the environment. Over 90% of respondents in all three locations (seven-county metro, other metro areas, and non-metro areas) get environmental information from the TV. Newspapers are a source for almost 90% of the adults in each area. Radio also plays an important function in disseminating environmental information, with 60% or more of adults in the different areas of the state using it as a source for environmental information.

Interestingly, the Internet is used by almost 40% of the respondents from each location, surprising given various connectivity issues within the state. Almost 60% or more of respondents in each location receive information from government agencies. In addition, approximately 50% of residents (combining for a lot and some) get environmental information from children. Interestingly, 25% of adults in each location use ELCs a lot for information. However, the number of adults who do not use these facilities for information is highest in non-metro areas, which may be a result of the small

number of these facilities in rural areas. Adults in the seven-county metro area are significantly more likely to count on environmental groups as a source of information than adults living in other areas around the state.

Education. The general trend for adults in the education categories is shown in Figure 14. While it follows a similar overall trend as that in Figure 12, education is a significant factor for some of the sources of information used by respondents in each category. College graduates use the following sources significantly more than adults with some college or a high school education or less: newspapers, TV, ELCs, magazines, own training/education, environmental groups, government agencies, and the Internet (listed according to use)

Figure 14. Sources of environmental information for Minnesotans by education level*

Information source	College degree	Some college education	High school education
Television	90%	91%	94%
Newspapers	93%	91%	89%
Environmental learning centers	85%	80%	66%
Magazines	79%	71%	58%
Own training and education	77%	69%	58%
Environmental groups	76%	68%	56%
Radio	66%	59%	57%
Friends/relatives	66%	60%	48%
Government agencies	67%	58%	53%
Children	45%	48%	52%
Internet	49%	36%	23%

* combined responses for "some" and "a lot"

Age. There are significant differences among age groups for all information sources with the exception of TV. One of the more interesting findings related to age categories is that 48% of adults in the 18-34 age group, 45% of those in the 35-44 group, 37% of those in the 45-64 group, and only 11% of those in the 65 and over category use the Internet for information on this topic. Again, this is not surprising given the type of technology discussed. However, 41% of adults in the 18-34 age group, 61% of adults in the 35-44 age group, 50% of those in the 45-64 group, and only 35% of those aged 65 and over depend on children for environmental information.

In addition, 77% of those in the 18-34 category, 72% of adults 45-64, 70% of those 35-44, and 41% of adults in the 65 and over group depend on their own training for information. Over 56% of those 65 and over use ELCs as sources of information, while almost 80% of adults in the 45-64 age group use them and 85% of those 18-44 access them for environmental information (see Figure 15).

Figure 15. Sources of environmental information for Minnesotans by age group*

Information source	Ages 18-34	Ages 35-44	Ages 45-64	Ages 65 and over
Television	92%	92%	92%	87%
Newspapers	87%	90%	93%	93%
Environmental learning centers	85%	85%	79%	57%
Magazines	66%	73%	76%	67%
Own training and education	77%	70%	72%	41%
Environmental groups	64%	67%	74%	58%
Radio	57%	65%	67%	49%
Friends/relatives	59%	71%	63%	50%
Government agencies	55%	56%	66%	56%
Children	41%	61%	50%	35%
Internet	48%	46%	37%	11%

* combined responses for "some" and "a lot"

Income. Income levels also seem to influence information sources. Significant differences were found in the following sources of information for the different income levels: magazines, radio, government agencies, Internet, environmental groups, training/education, and ELCs. The top three sources of environmental information for all income levels are TV, newspapers, and ELCs. Again, it is interesting that ELCs play such a role in the state. ELCs are also used as sources of information primarily by those earning over $75,000 (86%) compared to those earning $30,000 or less (62%). (See Figure 16.)

Figure 16. Sources of environmental information for Minnesotans by income

Information source	$30,000 or less	$30,000 to $50,000	$50,000 to $75,000	over $75,000
Newspapers	86%	91%	93%	93%
Television	92%	93%	92%	91%
Environmental learning centers	62%	80%	83%	86%
Magazines	59%	73%	75%	76%
Own training and education	60%	67%	72%	75%
Environmental groups	59%	69%	67%	74%
Government agencies	49%	66%	63%	62%
Friends/relatives	60%	59%	63%	62%
Radio	50%	66%	62%	64%
Children	46%	49%	48%	48%
Internet	18%	37%	51%	44%

* combined responses for "some" and "a lot"

More than the other group, adults earning $50,000-$75,000 (51%) use the Internet for environmental information, with those earning less than $30,000 using it the least (18%). However, as stated earlier, this is quite a high percentage even at 18%, considering the usage patterns for the Internet across the United States.

It is also clear that people across the different income levels rely heavily on their own training and education for environmental information (increasing from 60% of those earning $30,000 or less to 75% in of those earning over $75,000). This points to the importance and role of environmental education in the K-12 system as well as to that of education opportunities after leaving formal schooling.

Environmental groups also play an important role for accessing environmental information across income levels. People earning $75,000 or more use these groups frequently (74%), declining with each level to 59% for those earning $30,000 or less. Nonetheless, environmental groups still play an important role in disseminating information to Minnesotans. Use of government agencies also shows a difference among income groups. Those earning $30,000 or less use them the least at 49%, while the other income levels vary in usage from 62% to 66%.

Connections with other research

Previous surveys around the state by other organizations have produced similar results for comparable questions. While the results may not be directly correlated, there are some similar patterns among the surveys. For example, in relation to information sources, the Metropolitan Council (Met Council) found that 78% of those surveyed in the seven-county metro area used the mass media for information on water quality. As in the statewide survey used in the current report, mass media plays a very important role in giving residents access to information.

However, the Met Council reported that only 1% of those surveyed in 1997 received information through web sites, considerably less than the 36% of Minnesota residents who indicated in this survey that they received information through the Internet. The difference may be related to a number of factors, such as access to the Internet, the seven-county metro area versus a statewide sample, the amount of information on the Internet in 1997 versus 2001, and the content – water quality issues are very specific and only one part of what could be considered environmental information.

A study performed in 2000 by the Minnesota Department of Natural Resources (DNR) indicated that 24% of respondents listed the agency's web site as a source of information. While this is considerably higher than the Met Council figure for information from the Internet, it is still lower than this survey. Again, the difference may be related to the specificity of the content – DNR information versus environmental information.

Part 2

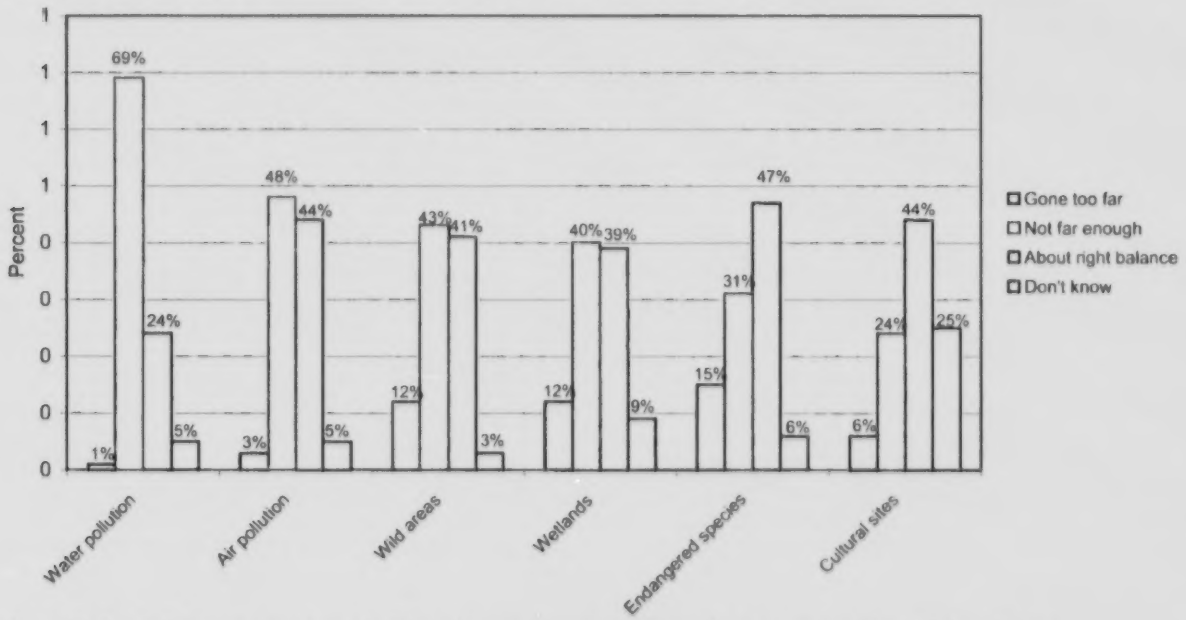
Environmental Attitudes

To collect data about environmental attitudes, adult Minnesotans were asked a series of questions concerning *attitudes toward* the environment. The questions were divided into two sets: one dealing with environmental protection, the other based on choosing where to live (Questions 2A-F).

Attitudes toward environmental protection

Minnesotans were asked about their support for environmental laws and regulations. The possible responses available for answering the questions were that laws and regulations have gone too far, not gone far enough, or struck the right balance. Respondents could also answer they don't know. Figure 17 shows the responses of Minnesota adults to these questions.

Figure 17. Responses of Minnesotans to laws and regulations on specific environmental issues



Overall, few Minnesota residents believe that environmental laws have gone too far – only 15% or fewer gave such a response for the questions in the attitude section of the survey. The responses to laws and regulations on specific environmental issues show that Minnesotans consider water pollution to be extremely important and that water is not safeguarded enough. More protection of wild areas and wetlands is seen as important (43% and 40% respectively), although almost 40% of those surveyed believe that the correct balance of regulation is met for these environmental areas. Minnesota adults do not seem to make the connection between the value of natural areas and wetlands in helping water quality, although 41% of those surveyed did know that wetlands are the best at cleaning or filtering water.

It is interesting to note that air pollution is seen as also requiring more regulations but the difference between not enough laws and the correct balance of regulation is less than 4%, compared to the same statements for water pollution, where the difference is almost 46%. Interestingly, in relation to

protection of endangered species and cultural sites, 47% and 44% of Minnesotans, respectively, believe that a correct balance has been reached in laws and regulation, while 31% and 24% respectively believe that more regulations are required (see Figure 17). Protection for cultural sites is important in the history of the landscape and its human inhabitants. In this question, 59% of those surveyed believed that the right balance had been struck in preserving these areas, while 32% stated that more regulations should be passed.

The result for air pollution is interesting considering that almost 52% of those surveyed knew that carbon emissions were the main cause of global climate change and almost 70% knew that motor vehicles contributed to air pollution. While the support for increasing regulation for air pollution is relatively high (48%), it is 21% below that of water pollution and 15% below that of the most recent national response (Figure 18). In fact, when comparing Minnesota to the national responses on this issue, it is clear that more Minnesotans believe that the correct balance has been struck with this environmental issue. In relation to water pollution regulation, Minnesota adults mirror the responses overall of those at the national level (Figure 19).

Figure 18. Comparison of Minnesota and national responses to regulations for air pollution

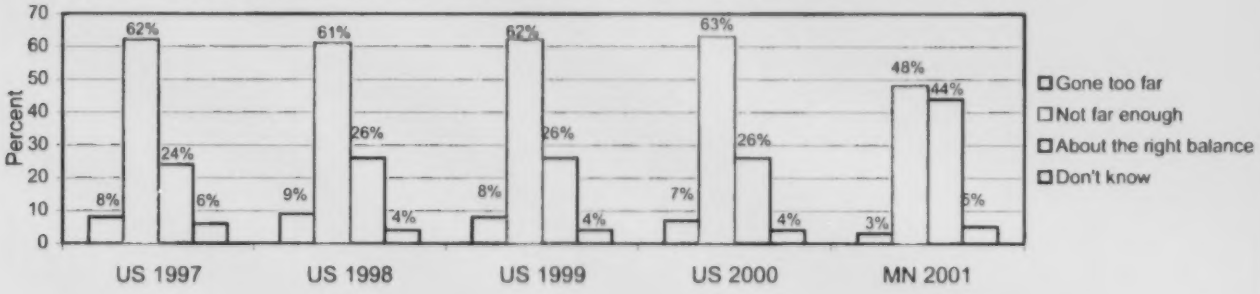
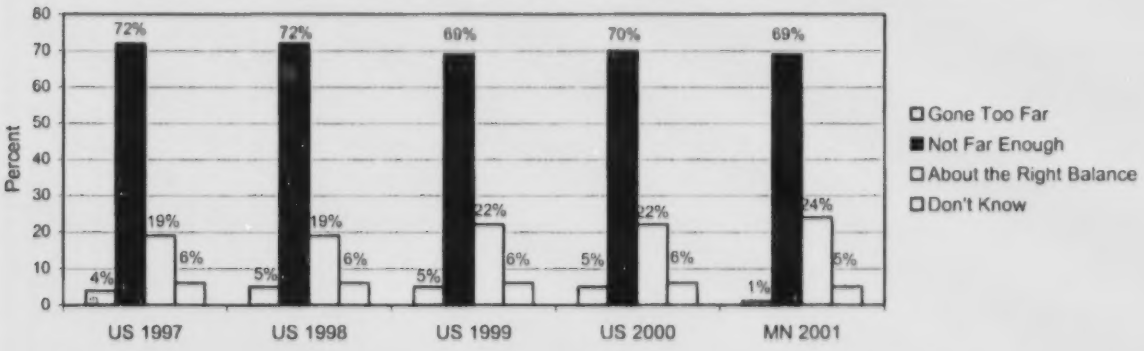


Figure 19. Comparison of Minnesota and national responses to regulations for water pollution



When comparing the national responses for the other three environmental issues (protection of wild areas, wetlands, and endangered species), it is interesting to note that in all cases Minnesota adults believe that the right balance has been struck in laws and regulations for these more so than in the national surveys (Figures 23, 24, and 25).

Figure 20. Comparison of Minnesota and national responses to regulations protecting wild or natural areas

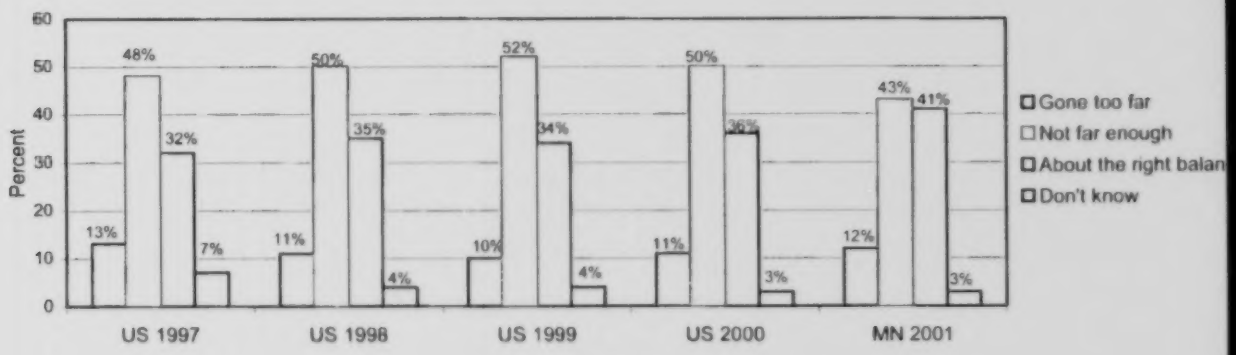
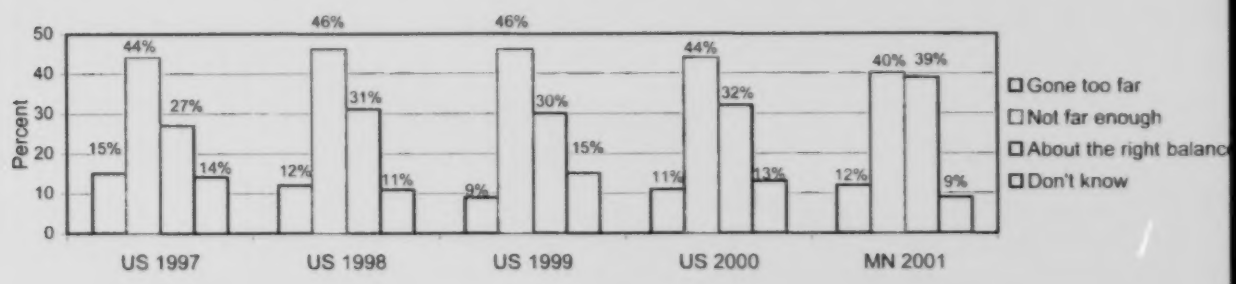
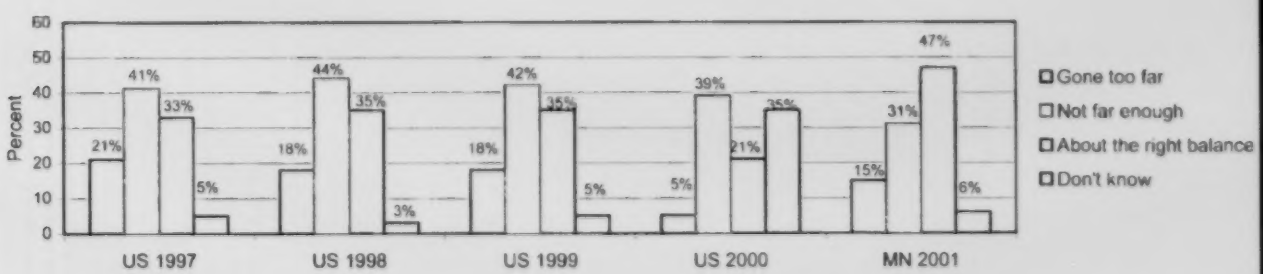


Figure 21. Comparison of Minnesota and national responses to regulations protecting wetlands



Also, in all cases, Minnesotans do not score as high as national respondents in believing that additional regulation is required to safeguard wild areas, wetlands, and endangered species. In fact, concerning the issue of endangered species, this receives the lowest support for additional regulation from Minnesotans in comparison to the national scores (Figure 22). This may be the result of media coverage of endangered species issues in the state, such as the recovery of the bald eagle.

Figure 22. Comparison of Minnesota and national responses to regulations protecting endangered species



Demographics

Gender. Significantly, females were generally more likely to believe that regulations had not gone far enough. The one exception was wetland protection; but even in response to this question more males (17%) than females (10%) thought that regulations had gone too far. Interestingly, more females (46%) believed that wetland regulations had struck the right balance than males (39%). Yet, females do not score as high as males on the knowledge scores in general or on specific questions, even those relating to air or water pollution issues.

Age. Significant differences were reported for all questions except regulations on fighting water pollution and protecting cultural sites. The highest percentage of respondents in all age groups did not believe that regulations had gone far enough in fighting water pollution. On the other hand, the highest percentage of respondents in all age groups believed that regulations had struck the right balance in protecting cultural sites. Adults in the 18-34 age group thought regulations for fighting air pollution and for protecting wild/natural areas, wetlands, and endangered species had not gone far enough. In fact, as respondents got older, their belief that these regulations did not go far enough decreased.

Education. The more educated an adult, the more likely that he or she believes that regulation in all these areas has not gone far enough. However, it shows significance for only two areas, that of fighting water pollution and protecting wild and natural areas. Fighting water pollution received the highest score from all the education categories, (77%, 75%, and 66% respectively for college or higher, some college, and high school education).

However, the adults in these categories did not support extra regulation for wetland protection (49%, 42%, 40% respectively). These natural wetland systems play an important role in cleaning water, yet adults do not seem to be making this connection. However, adults in two of the categories (some college and college degree) did support additional protection of wild and natural areas.

Location. Significant differences were found among residents in the three locations and their attitudes toward regulations. While a large number of Minnesotans believe that regulations protecting endangered species had struck the right balance, there is a large difference between those living in the seven-country metro and the other two locations on whether regulations having gone too far.

Residents of the seven-county metro were more likely to think that regulations for fighting air and water pollution; for protecting wild/natural areas, wetlands, and endangered species; and for preserving the state's cultural sites had not gone far enough. However, in the case of the regulations shown in Figures 23, 24, and 25, it is clear that residents of non-metro areas believe that a balance has been struck in the areas of ancient cultural sites and protection of wetlands and wild/natural areas.

Figure 23. Responses of Minnesotans living in different areas to regulations on Minnesota's ancient cultural sites

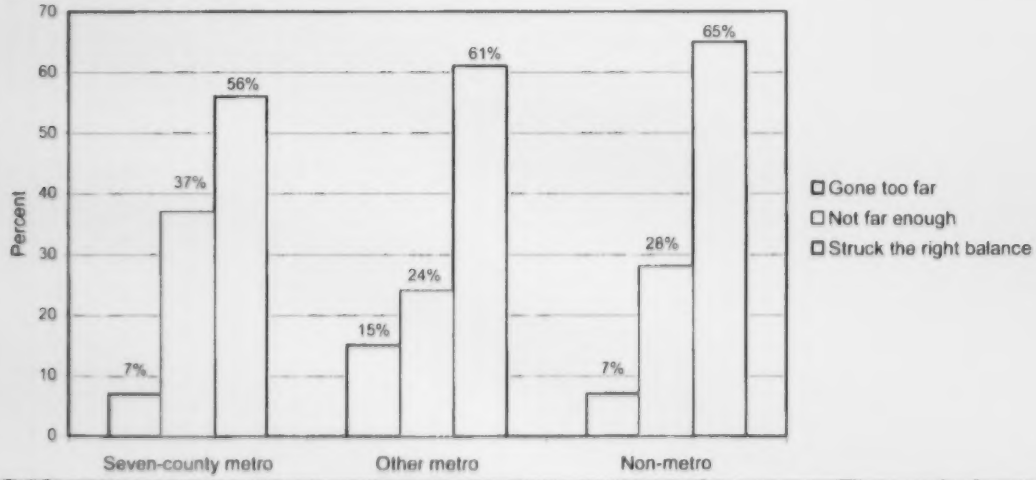


Figure 24. Responses of Minnesotans living in different areas of the state to regulations for protecting Minnesota's wetlands

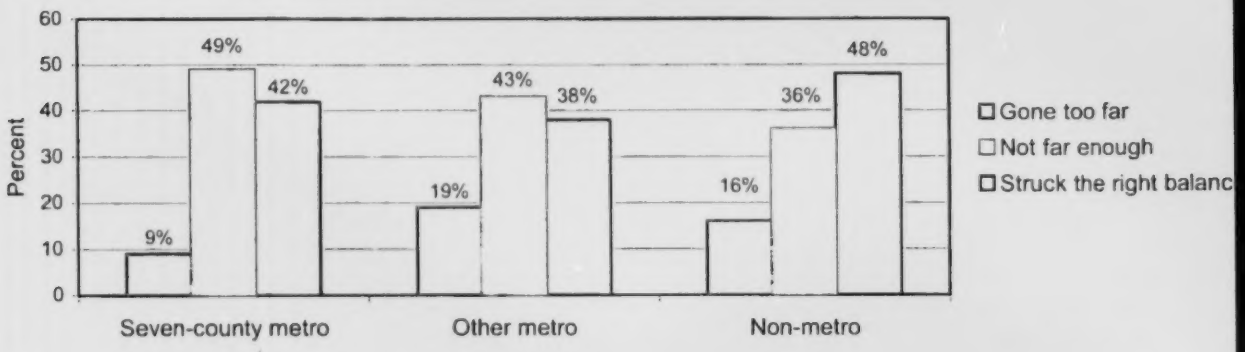
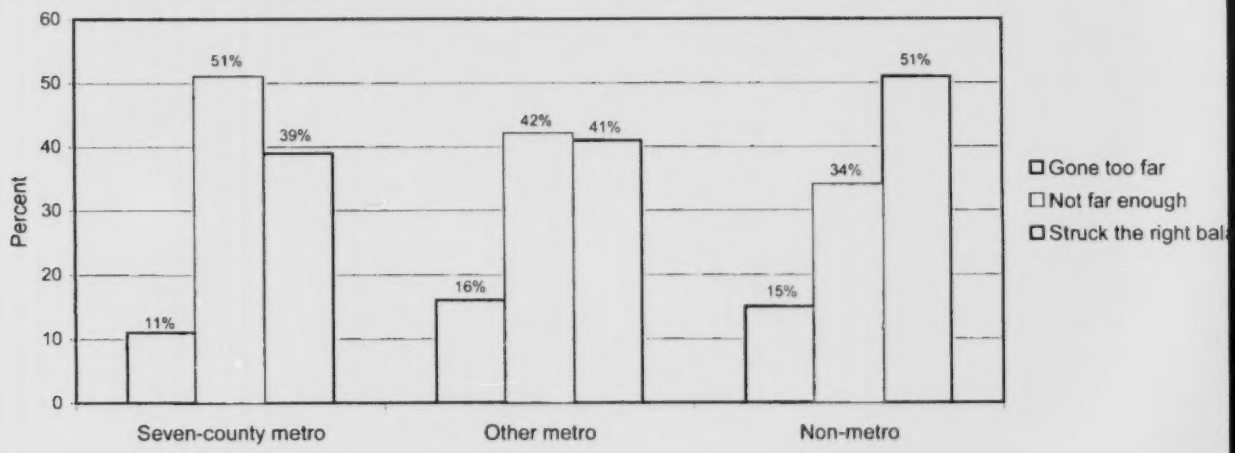


Figure 25. Responses of Minnesotans living in different areas of the state to regulations on Minnesota's wild or natural areas

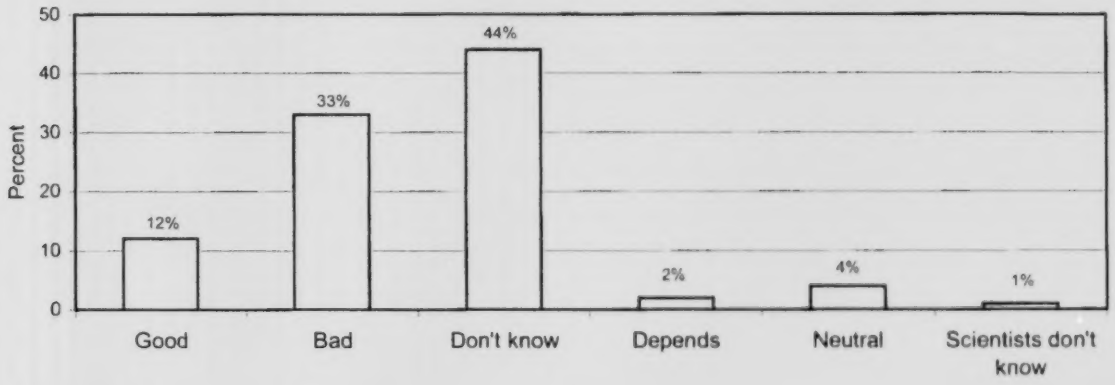


Income. No significant differences were found for income and regulations. However, Minnesotans in each of the four income categories believe regulations for fighting water pollution have not gone far enough (average of 73%), whereas for air pollution the difference between not far enough and struck the right balance was insignificant. This latter trend was followed for the other questions on protecting wild/natural areas and wetlands. Overall, respondents believed that regulations protecting ancient cultural sites and endangered species have struck the right balance (average 59% and 51% respectively).

Attitudes toward genetically modified organisms (GMOs)

Survey participants were asked if they thought genetically modified foods are good or bad for the environment, or if they'd thought about it much (Question 13). Thirty-three percent of Minnesota adults believed that GMOs were bad for the environment while 12% responded that they were good (Figure 26). However, almost 44% of Minnesota adults had not thought about the issue or didn't know if there was an impact, good or bad, on the environment, although the topic certainly has garnered more media attention in 2000 and 2001. However, this number is not surprising, as discussions in the media about the benefits and disadvantages of GMOs have only begun in the last five years or so.

Figure 26. Responses of Minnesotans about genetically modified organisms



Demographics

Gender. Significantly, females had thought more about GMOs than males. Forty-three percent of women responded that GMOs were bad for the environment, compared to 29% of males. Slightly fewer females (47%) than males (51%) indicated that they had not thought much about GMOs.

Age. A significant difference was not found among age groups for this question. Almost 50% of all the respondents in the various age groups had not thought much about this topic, however those that had clearly believed that GMOs were bad for the environment.

Education. Adults with a college education were significantly more likely to think of GMOs as bad (41%) rather than good (18%), although 41% of these respondents also had not thought about them much. Fifty percent or more of respondents in the remaining education categories (some college, high school) had not thought much about the topic but also were more likely to believe that GMOs were bad for the environment.

Location. A significant difference was not found among groups for this question. However, 54% of those in other metro areas, 52% of those in non-metro areas, and 45% of those in the seven-county metro area had not thought much about GMOs. However, more respondents in each area believed that GMOs were bad than good, although this was still not as high as those who had not thought about them much.

Income. A significant difference was found for this question. Twenty-two percent of those earning over $75,000 believed that GMOs were good for the environment, a rate double or more of the responses of the other groups to this question.

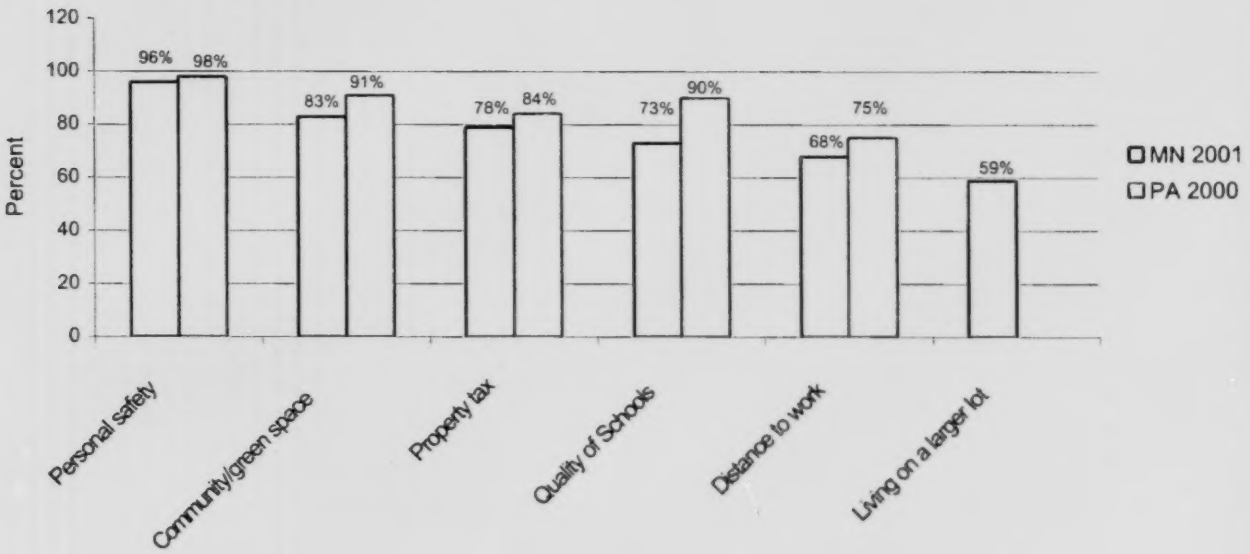
Attitudes on choosing where to live

A set of questions was posed to the respondents about the importance of six factors in their choice of where to live (Questions 18A-F). These factors were quality of schools, personal safety, property taxes, distance to work, community/green space, and living on a larger lot. The respondents could choose from "very important," "important," "unimportant," and "very unimportant." Those surveyed were also given the option of "don't know." The factor concerning "living on a larger lot" was the only one not used in the *Pennsylvania Environmental Report Card.*

The scores for "very important" and "important" were combined and are shown in Figure 27. It is clear that both for Minnesotan and Pennsylvanian adults that personal safety is the most important factor for choosing where to live. (For Minnesotans, it is the highest in the "very important" category

as well.) It is interesting to note that while community/green space is again important to both groups, property taxes seem to be more important to Minnesotans and ranks as the third most important factor for that group, whereas it is number four in the *Pennsylvania Environmental Report Card*. Distance to work is of lesser importance for both groups, and for Minnesota adults, living on a larger lot does not seem to be a major factor in this decision.

Figure 27. Comparison of Minnesota and Pennsylvania responses for choosing where to live



This result is interesting given the high knowledge of Minnesota adults on the issue of urban sprawl. While Minnesota residents did know how urban sprawl occurs for the most part, distance to work is not a major consideration in the decision-making process in where to live, even though 82% of the respondents knew that urban sprawl may increase the amount of time spent driving. The fact that Minnesota residents do not see distance to work as being of major importance compared to other factors in choosing where to live probably has an influence on the growth of the Twin Cities.

Demographics

Gender. For both genders, personal safety is the most important factor in choosing where to live followed by community/green spaces and property taxes. However, personal safety is significantly more important for females (70%) than males (51%) in choosing where to live. For other factors, the differences are not significant between females and males.

Age. Across age categories, personal safety ranks first followed by community/green spaces, property taxes, quality of schools, distance to work, and living on a larger lot when the categories of "very important" and "important" are combined. Significant differences were seen across age categories for the factors of distance to work, quality of schools, property taxes, and living on a larger lot.

Education. A significant difference was found among education levels for the factors of property taxes and quality of schools. Seventy-three percent of those with a high school education believed quality of schools was important (combining "very important" and "important") compared to 76% of those with some college education and 79% of college graduates. Property taxes were more important as a deciding factor for choosing where to live for those with a high school education (87%) compared to those with some college education (79%) and college graduates (74%).

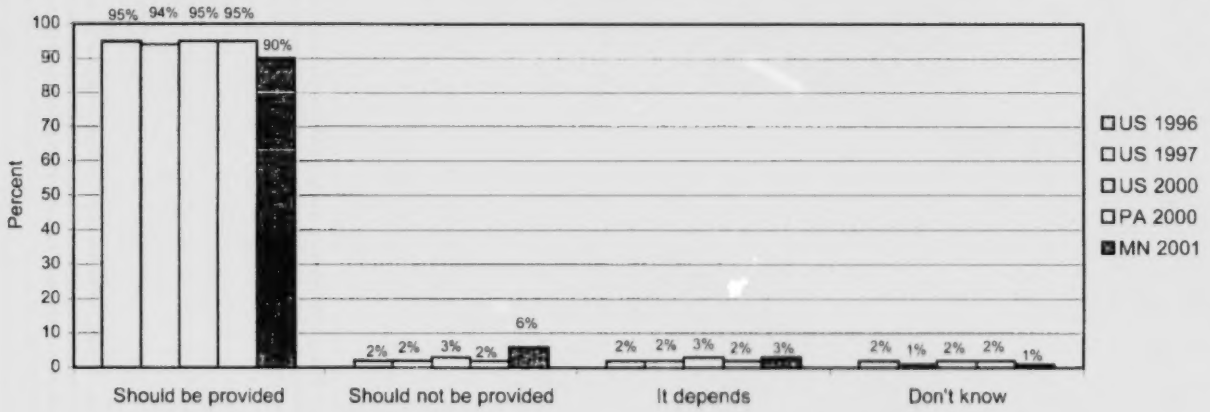
Location. A significant difference was not found for location or current area of residence and choosing where to live. However, for those adults living in the seven-county metro area, the factors in ranked order are personal safety, distance to work, community/green spaces, property taxes, quality of schools (with very little difference among these five factors), and a big decrease to living on a larger lot. For those living in other metro and non-metro areas around the state, the factors were listed as personal safety, property taxes, community/green spaces, quality of schools, distance to work, and living on a larger lot.

Income. The only significant differences among income levels were for the factors of property taxes and distance to work. Property taxes and distance to work are most important to those earning between $30,000-50,000 compared to the other groups.

Attitudes toward environmental education

Minnesota adults were asked two questions about environmental education (Questions 15A-B). The first was whether environmental education should be provided in K-12 schools. The second was what should be the primary source for funding this education.

Figure 28. Comparison of adults' support for environmental education in K-12 schools



* For US 2000, Should not be provided/Depends total 3%

As shown in Figure 28, the majority of Minnesotans (90%) want schools to provide environmental education. This support is not surprising given the interest of residents in providing quality education to the state's children, and not significantly different from the *Pennsylvania Environmental Report Card* and *National Environmental Report Cards* for 1996, 1997, and 2000.

Demographics. Significantly, females (96%) think that schools should provide K-12 environmental education compared to males (90%). This may also reflect women's tendency toward more pro-environmental attitudes. For the most part, trends across the other demographic characteristics do not show any significant differences among groups. Support did not vary by income level, location, education level, and only slightly by age.

Funding for environmental education

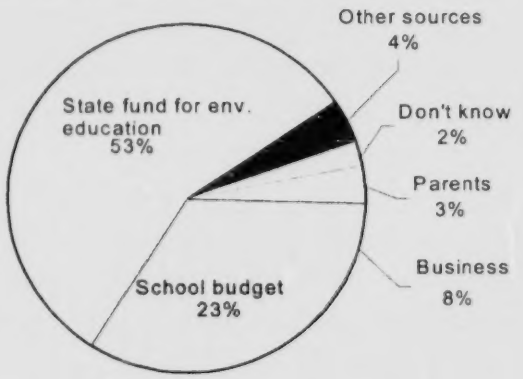
When asked about funding, over 52% of Minnesota adults believe that environmental education should be financed through a state fund earmarked for that activity, while 23% responded that it should come through the normal budgeting process of schools (Figure 29).

Demographics. Trends across location, income, and education demographics did not show any significant differences. However for location, more adults *outside* the seven-county metro area (65%) believed that a state fund should be established to pay for K-12 environmental education, 8% higher than those adults living in the seven-county metro area. Adults earning more than $75,000 showed the least support for a state fund for environmental education, believing more than other income groups that any funds should come from existing school budgets (33%). The other income groups supported the creation of a state fund by 61% to 76%. Those with a high school education or less supported a state fund more than those with some college education and college graduates.

Support for the state fund was significant across the age groups, and among the other options, with the 18-34 age group showing the highest support (66%), followed by the 35-44 and the 65 and over age groups (62% for both), and 57% of adults in the 45-64 age group.

Significantly more females (67%) believed that the state fund should pay for environmental education as opposed to 53% of males, while more males (34%) than females (22%) believed that it should be funded from the existing school budgets.

Figure 29. Choice of funding sources for environmental education in Minnesota K-12 schools



Connections with other research

Previous surveys by other organizations around the state have produced similar results for comparable questions. While the results may not be directly correlated, there are some similar patterns among the surveys. In 1999, the Minnesota Pollution Control Agency reported on the *Governor's Forum: Citizens Speak Out on the Environment and the Statewide Citizen Survey*. This report indicated that water-related environmental issues ranked high across the state. At some of the forums, education emerged as an important issue, with up to 90% believing that environmental education was needed in schools.

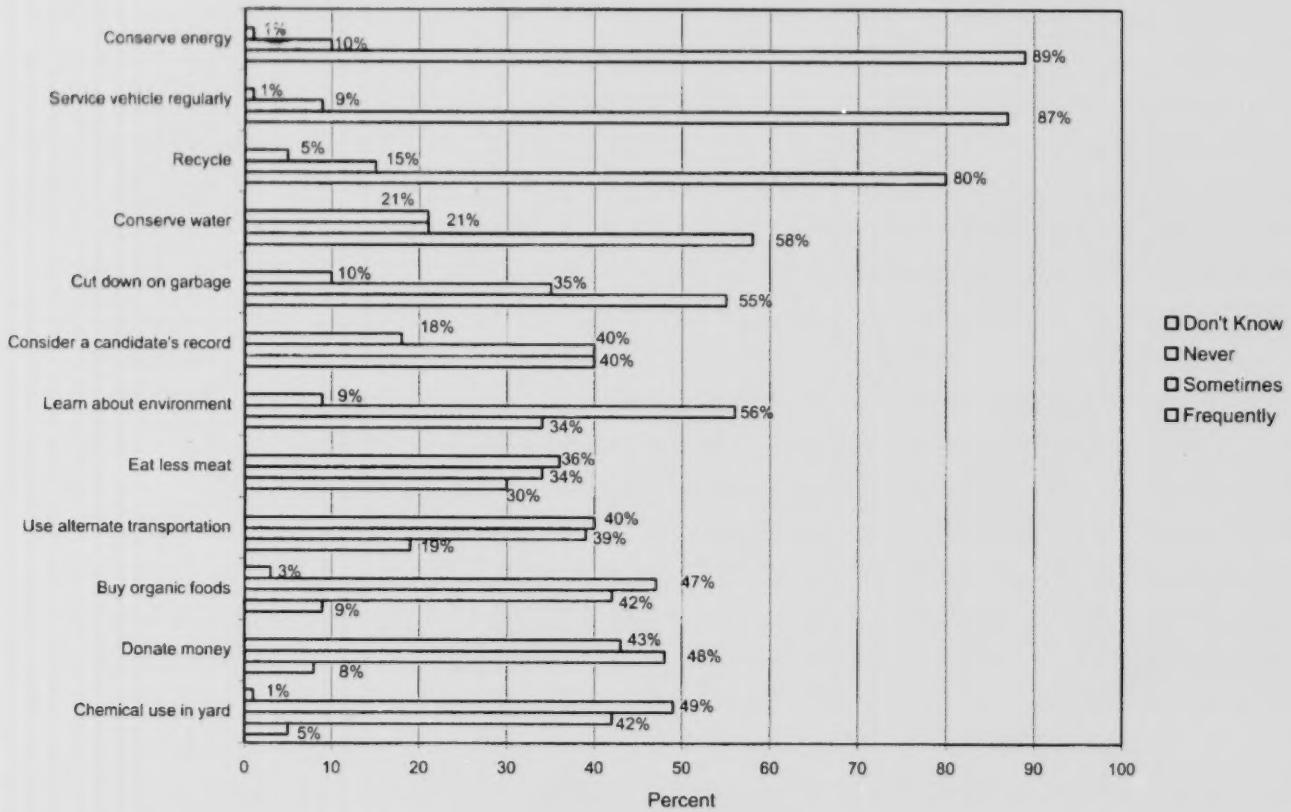
Also, in the *League of Conservation Voters Education Fund Survey (2000)*, respondents indicated that water quality was the environmental concern that they worried about the most. This would reinforce the response in this research where residents indicated that water pollution regulations had not gone far enough.

Part 3

Environmental Behaviors

To collect data about behaviors, Minnesota adults were asked a series of questions about their daily activities as well as some of their longer term behaviors concerning a number of environmental actions, from recycling and chemical use on lawns, to considering a candidate's record on the environment. In total, there were questions on twelve actions or behaviors toward the environment (Questions 17A-N). Respondents were given the options of answering "frequently," "sometimes," "never," and "don't know.

Figure 30. Self-reported environmental activities of Minnesotans



Using 55% as a cut-off percentage, it is clear that a majority of Minnesotans frequently conserve energy (89%); service their vehicles regularly (87%); recycle glass, paper, and cans (80%); conserve water (58%); and cut down on creating garbage (55%). The top two actions are very much related to actions linked with saving money, either cutting down on electricity bills or car repair costs. Do Minnesota adults consciously take such actions to help the environment or do they do these things to save money? While this may be difficult to answer, the end result is that the environment benefits from reduced electricity generation and more fuel-efficient cars.

A similar point may be considered about recycling. Whether state mandates on recycling make the practice more convenient, or whether Minnesotans are recycling because they know about recycling's

impact on landfill space and the environment, 80% of Minnesota adults recycle frequently. Data from various surveys such as the 2001 *Ramsey County Resident Recycling Survey* show that recycling is also high (89%) in specific locations across the state.

Significantly fewer adults, 58%, indicated that they conserve water by turning off water when brushing their teeth. While the knowledge and concern of Minnesotans on water issues is high, it is somewhat surprising that the percentage of adults who report conserving water in this way is this low. Perhaps the issues of water quality and quantity are separate topics for Minnesota adults.

In addition, the top five activities that Minnesota adults perform most frequently have two factors in common – the activities can be performed easily in the home and/or there is an economic benefit to each of these behaviors. For example, servicing a vehicle regularly is of great consequence in a state where personal transportation is important.

Over half (56%) of Minnesotans surveyed stated that they sometimes try to learn about the environment or environmental issues, and 48% sometimes donate money to a group or organization working to protect the environment. Almost half of Minnesota adults do not use chemicals in their yards and gardens. Of the 40% of Minnesotans who reported that they have a yard, the number (40%) who *never* use chemicals in their yard is encouraging, as is the low number of people (5%) on the other end of the spectrum who frequently use chemicals in their yards. According to the *National Environmental Report Card* (2000), 36% of U.S. residents frequently avoid using chemicals in gardens, considerably lower than the Minnesota level.

Interestingly, 80% of residents consider a candidate's record on the environment, either frequently (40%) or sometimes (40%) when voting. This finding is somewhat similar to that in the *League of Conservation Voters Education Fund Survey*. (See *Connections with other research* at the end of this section for more details on this survey.)

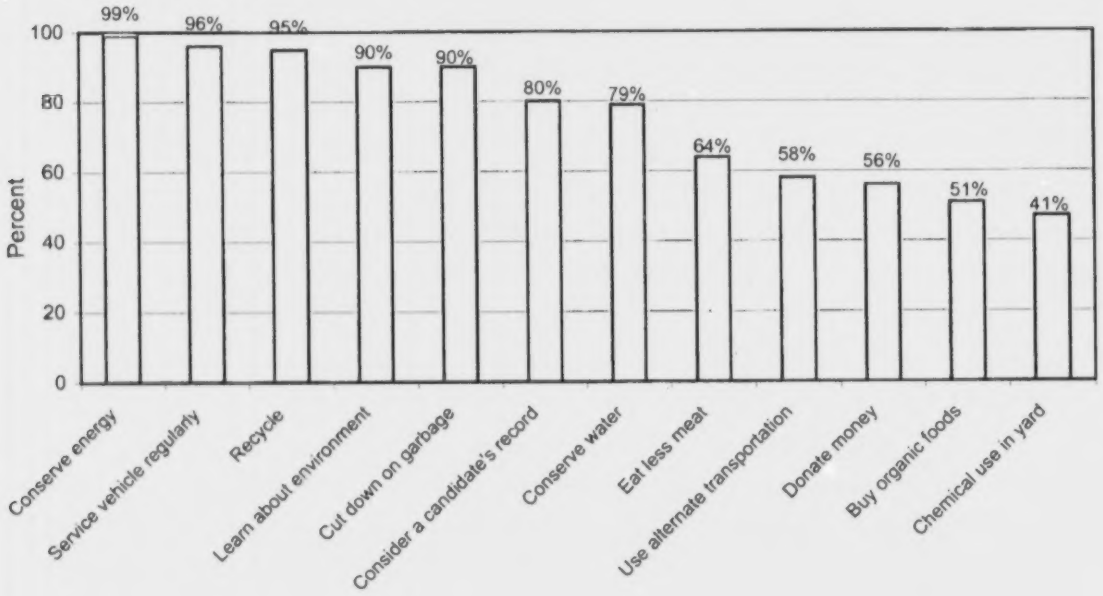
Relatively few Minnesota adults purchase organic foods or eat less red meat than most other people. As for food consumption, eating less red meat than most other people was split almost evenly among the three options – frequently (30%), sometimes (34%), and never (36%). However, in regards to purchasing organic foods, only 9% of the respondents frequently buy organic foods, while 42% sometimes do and 47% never buy organic foods.

When Minnesotans who have access to a car were asked how often they use other types of transportation, such as walking, biking, riding the bus, or carpooling instead of driving, 40% indicated they never use these, while 39% sometimes use them and 19% frequently use these other types of transportation. This seems a high number of non-users for Minnesota, although understandable given the rural nature of the state and the size of the seven-county metro. However, it is promising that almost 60% of respondents use some form of alternate transportation instead of driving.

Combining "frequent" and "sometimes" responses of Minnesotans

If the responses for "frequently" and "sometimes" are combined, then the overall ranking of actions changes (see Figure 31). In this case, 75% is used as a cut-off percentage for the majority of adults taking a particular action. Still, the top three actions (conserving energy, servicing vehicles, and recycling) remain the same as before. Learning about the environment jumps to 90%, while conserving water decreases from 4th to 7th as the most common environmental activity. Donating money to environmental organizations moves up one place in the rankings, with 56% of adults contributing money to these organizations. Fifty-eight percent of adults use alternate transportation, with at least 40% using it sometimes.

Figure 31. Combined responses of Minnesotans' environmental activities

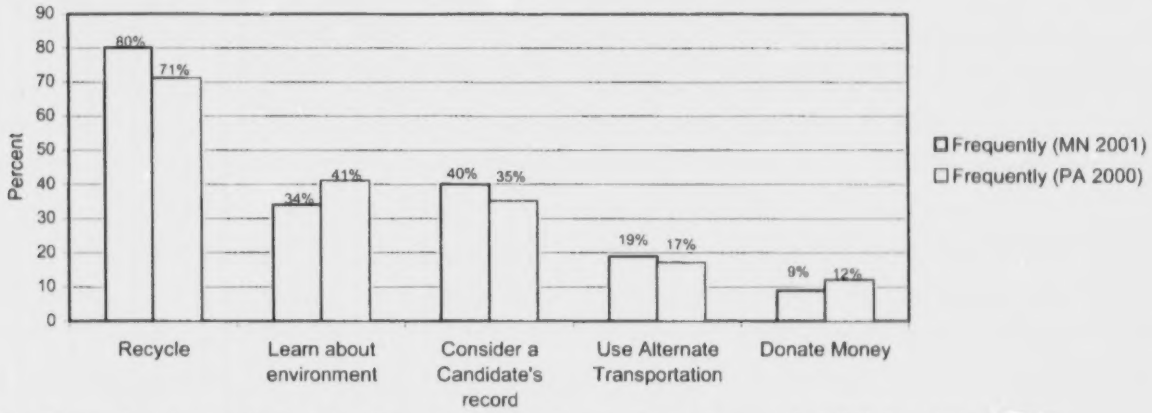


Comparing environmental activities of Minnesotans to those of Pennsylvanians and U.S. citizens

Comparing Minnesota adults to Pennsylvanians on similar behaviors, it is clear that more Minnesotans report that they recycle frequently (81%) than Pennsylvanians (71%), and more Minnesotans consider a candidate's record on protecting the environment (40%) than Pennsylvanians (35%). On the other hand, more Pennsylvanians report frequently trying to learn about the environment and environmental issues (41%) than Minnesotans (34%), and more report frequently donating money to environmental groups (12%) than Minnesota adults (9%).

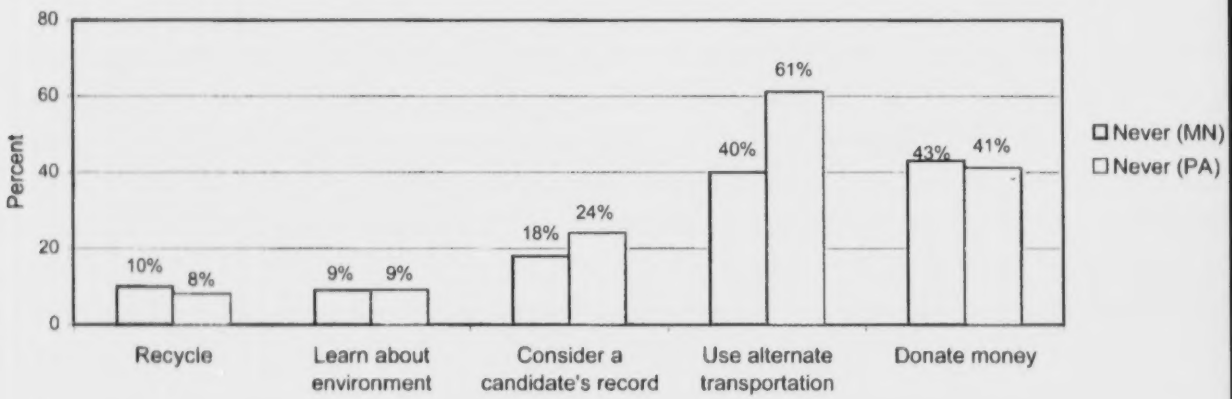
Interestingly, more Minnesota adults report that they *sometimes* recycle than Pennsylvanians (35% vs. 21%), learn about the environment and environmental issues (56% vs. 49%), and use alternate transportation (39% vs. 20%).

Figure 32. Frequently reported environmental activities of Minnesota and Pennsylvania adults



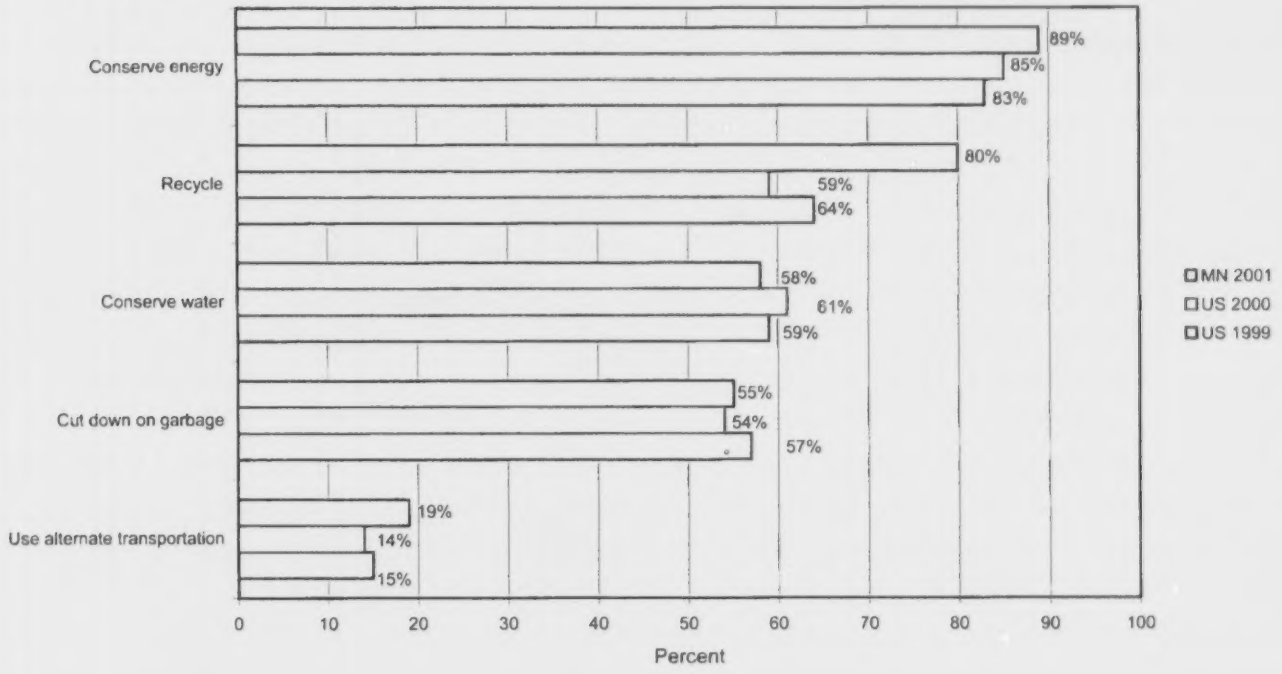
More Pennsylvanians indicated that they *never* consider a candidate's record (24%) than Minnesotans (18%), and even more Pennsylvanians than Minnesotans reported that they travel exclusively by car, with 61% indicating that they never use other forms of transportation, compared with 40% of Minnesotans. Minnesotans and Pennsylvanians report little if any difference in the other activities shown in Figure 33.

Figure 33. Minnesota and Pennsylvania adults who report that they never engage in specific environmental activities



Comparing the results of Minnesotans to that of *National Environmental Report Cards* (1999 and 2000), it is interesting to note that Minnesota adults report that they conserve energy (89%), recycle (80%), and use alternate transportation (19%) more frequently than U.S. adults (85%, 59%, and 14% respectively in 2000; 83%, 64%, and 15% respectively in 1999). However, the proportion of U.S. adults who indicated they frequently conserve water and cut down on garbage production is virtually identical to the proportion of Minnesota adults who do so.

Figure 34. Comparison of Minnesota and U.S. adults on frequently reported environmental activities



Demographics

Gender. Females put their pro-environmental beliefs into action, generally performing most activities more frequently than males. The most significant differences between females and males are in using alternate transportation, using chemicals in yards, consuming meat, and learning about environmental issues. Women are more likely to frequently recycle (82% vs. 78%), cut down on garbage (58% vs. 51%), avoid using chemicals in yards more (50% vs. 41%), conserve water (60% vs. 55%), conserve energy (91% vs. 87%), use alternate transportation (22% vs. 14%), service their vehicle (92% vs. 88%), and eat less meat (34% vs. 18%). Males (41%) try to learn about the environment more frequently than females (29%). Males (44%) also consider a candidate's record on the environment more frequently than females (39%).

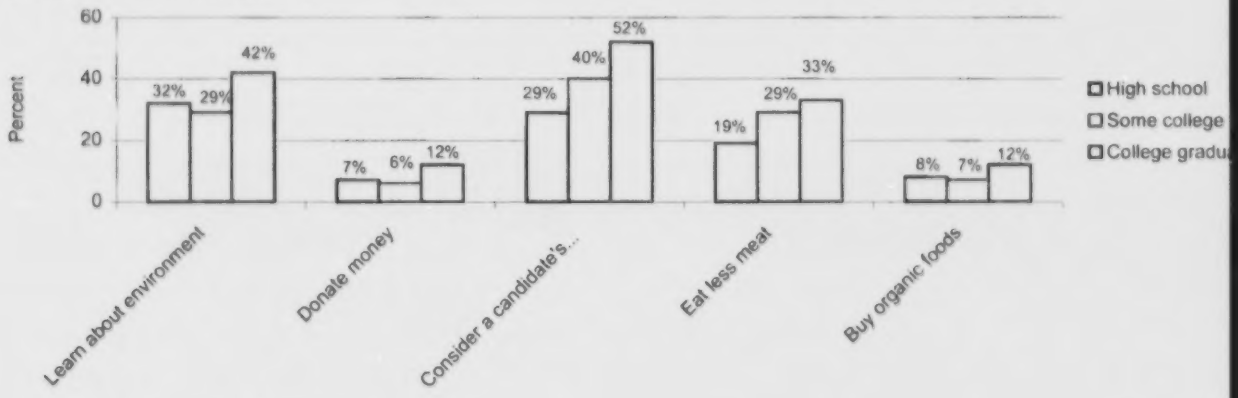
Age. Age plays a significant role in the environmental activities performed by Minnesota adults. There is a significant difference among the groups for the following frequent behaviors: recycling (72% to 89% from youngest to oldest adults), creating less garbage (41% to 70% from youngest to oldest adults), using alternate transport (23% to 14% from youngest to oldest), learning about the environment (21% to 45% from youngest to oldest), servicing their vehicles (82% to 95% from youngest to oldest), eating less red meat (21% to 35%, youngest to oldest) and donating money (approximately 7-8% for those aged 18-34, 35-44, and 65 and over to 11% for 45-64 year olds).

Education. Education plays a significant role in environmental activities performed by Minnesota residents. Using chemicals in yards, learning about the environment, donating money, considering a candidate's record, eating less meat, and buying organic foods show significant differences among the groups based on their level of education.

Almost 50% of college graduates and adults with some college education sometimes purchase organic foods, while 57% of respondents with a high school education or less *never* purchase organic foods.

Over a third (33%)of college graduates and 29% of adults with some college education frequently eat less meat, while 19% of adults with a high school education or less frequently eat less meat. Fifty-two percent of college graduates sometimes consider a candidate's record on protecting the environment when voting, whereas 40% of those with some college education and 30% of adults with a high school education or less sometimes consider a candidate's record when voting. Forty-two percent of college graduates, 29% of adults with some college education and 32% of those with high school education or less sometimes try to learn about the environment. In addition, 12% of college graduates, 6% of those with some college education and 7% of adults with high school education or less sometimes donate money to an environmental group.

Figure 35. Self-reported environmental activities frequently performed by Minnesotans in the three education categories



Location. No significant difference is seen for adults in the seven-county metro, other metro areas around the state, or non-metro areas in terms of frequencies of all the environmental activities, except meat consumption and considering a candidate's stance on protecting the environment. Twenty-six percent of those in other metro areas and 33% of residents in the seven-county metro area frequently eat less meat than most other people, compared to 19% of adults in non-metro areas,. Thirty percent of those adults in other metro areas frequently consider a candidate's stance on the environment, compared to 43% of those in the seven-county metro area, and 45% of non-metro residents

Income. The trend for this demographic was similar to the overall one for Minnesota adults. There were few significant differences by income level except in the following areas. Thirty-four percent of adults in the lowest income category ($30,000 or less) frequently consider a candidate's record on the environment, compared to 46% of those with the highest income (over $75,000). Also, 4% of those in the lowest income group reported donating money to environmental groups, compared to 13% for those in the highest income category. For those who had yards, 2% of those in the $30,000 or less category use chemicals in their yard, rising to 9% of those earning over $75,000.

Willingness to act

As can be seen from the previous results, Minnesota adults seem to show their commitment to the environment by engaging in certain environmental behaviors. In some cases, Minnesotans may do these activities because these behaviors are mandated, socially acceptable, and almost required (such as recycling) or because residents can save money. It is difficult to tell which of these motivates the environmental behaviors of Minnesotans.

As part of the survey, respondents were asked about their willingness to pay extra for gasoline if they knew that the additional money would significantly improve the natural environment (Questions 19, 19A-F). This question was asked in two different ways to make sure that the results were not strongly influenced by the wording of the question itself. Respondents were randomly assigned to one of the two formats. For both formats, 73% of Minnesota adults reported a willingness to pay extra for gas if they knew it would improve the environment.

How much more would Minnesota adults be willing to pay? Twenty-six percent said they would be willing to pay from 1¢ to 5¢ more per gallon, 27% reported they would be willing to spend an extra 6¢ to 20¢ per gallon, while another 19% responded that they would pay an extra 21¢ or more per gallon.

Influence of question. It seems that the format of the question did have an influence on the results at least in the amount of extra money people would be willing to pay for gas. However, in both cases, the percentage of people not willing to pay extra was almost the same, 28% for the first question, 27% for the second one. The amount of money respondents reported that they would be willing to pay, expressed as a mean, for the first format of the question was 23¢, while for the second format of the question it was 13¢. Perhaps Minnesota adults would, in all practicality, be willing to pay up to 18¢ extra for a gallon of gasoline (splitting the difference), if it would significantly improve the natural environment.[3]

Demographics

Gender. While there is not significant difference, females were more willing to pay extra for gas if the money was used to significantly improve the environment. Twenty-nine percent of females would pay between 6¢ and 20¢, while 27% would be willing to pay between 1¢ and 5¢. Approximately 25% of males would be willing to pay either 1¢ to 5¢ and 6¢ to 20¢.

Age. There is a significant difference between age groups in their willingness to pay extra for gasoline. Fifty percent of adults in the 65 and over age group, 72% of those in the 35-44 age group, 74% of respondents in the 45-64 group, and 82% of respondents in the 18-34 age category would be willing to pay extra for gas if it would improve the environment. Of those willing to pay extra, 37% of adults aged 18 to 34 would pay between 6¢ to 20¢, 28% of those aged 35 to 44, and 27% of residents aged 45 to 64 would pay the same amount. For those aged 65 and over, only 15% of adults would be willing to pay this amount, while double this number would be willing to pay 1¢ to 5¢.

Education. Significant differences were found among the groups for both parts of this question. College graduates (79%) were more willing to pay extra for gasoline if the money was used to significantly improve the environment, compared to those with some college education (72%) and adults with high school education or less (61%). College graduates (31%) would also be willing to pay more per gallon (6¢ to 20¢), whereas adults with some college education (29%) and high school education or less (28%) would be willing to pay 1¢ to 5¢ more for gas.

Location. Significant differences were found for both parts of this question. Sixty-four percent of non-metro residents would be willing to pay extra for gas, while 71% of adults in other metro areas and 75% in the seven-county metro area would be willing to pay extra for gas. Twenty-nine percent of non-metro adults would be willing to pay 1¢ to 5¢, while 26% of those in other metro areas and 31% of residents in the seven-county metro area would be willing to pay 6¢ to 20¢.

Income. Significant differences were found among groups for both parts of this question. Sixty-three percent of adults earning $30,000 or less, 70% of those in the $30,000 to $50,000 category, 79% of those in the $50,000 to $75,000 category, and 84% of those earning over $75,000 reported that they would be

[3] ***Gasoline prices:*** *During the course of the survey, gasoline prices fluctuated in the state from a low of approximately $1.33 per gallon to as high as $1.84. However, Minnesotans' willingness to pay did not seem to be strongly influenced by these fluctuations.*

willing to pay extra for gas if it would significantly improve the environment. Those adults in the lower income categories would be willing to pay less while those earning over $50,000 would be willing to pay more for gas if they knew it would significantly improve the environment.

Connections with other research

Previous surveys by other organizations around the state have produced similar results for comparable questions even though the results may not be directly correlated. In a survey conducted for the League of Conservation Voters Education Fund during 2000, a number of questions were asked of Minnesota residents on various issues. One of these concerned selecting candidates, and it was found that over 60% of those surveyed would chose a candidate with a pro-environmental stance. In this survey, 80% of those surveyed indicated that they would consider a candidate's stance on the environment when voting.

In May 2001, *Time* magazine published a feature on climate change. As part of that story, a poll was conducted by Time/CNN on the seriousness of global climate change and willingness to pay extra for a gallon of gasoline. Forty-eight percent of those surveyed nationally indicated they would be willing to pay 25¢ extra per gallon. Seventy-three percent of Minnesota residents indicated that they would be willing to pay extra for a gallon of gasoline if they knew it would be used to improve the environment; of those, 19% responded that they would pay an extra 21¢ or more per gallon.

Part 4

Environmental literacy

Integrating knowledge, attitudes, and behavior

This statewide survey has reported on Minnesota adults' environmental knowledge, attitudes, and behaviors. In this part of the report, an attempt is made to combine the results of the different sections in an integrated manner and to examine the possible influences of each component (knowledge, attitudes, and behavior) on the other ones.

Self-reported knowledge of the environment

By their own estimation, Minnesota residents believe themselves to be fairly knowledgeable about environmental issues and problems. Over 60% rate themselves as having a lot (11%) or a fair amount (54%) of knowledge about the environment. Thirty-one percent of respondents believe that they have only a little knowledge about environmental issues and problems, while 5% indicated that they knew practically nothing about these topics. These numbers seem to follow the U.S. trends overall (a lot 11%, a fair amount 59%, only a little 24%, and practically nothing 6%, as reported in the *National Environmental Report Card,* 2000).

Demographics

The relationship between self-reported knowledge and education is significant, with 74% of college graduates believing that they are fairly knowledgeable about environmental issues and problems, compared to 67% of respondents with some college and 51% of those who are high school educated. Significantly more respondents in higher income groups believe that they are more knowledgeable about environmental issues and problems than in the lower groups (75% for those earning over $75,000, 67% between $50,000-75,000, 61% between $30, 000-50,000, and 54% for those earning $30,000 or less). Self-assessed knowledge is also significantly higher among men than women (77% vs. 56%). Age and location are not significant in relation to self-reported knowledge.

However, when the number of correctly answered general environmental knowledge questions (out of eight) is examined in relation to the self-assessed knowledge levels, some interesting points can be made. Significantly, 18% of respondents who believed that they have a lot of knowledge about environmental issues and problems received an above-average score (5 to 6 questions correct) whereas 7% of respondents who answered two or less questions correctly also believed that they had a lot of knowledge about environmental issues (Figure 36).

Figure 36. Minnesota residents' environmental knowledge score and their self-reported knowledge of environmental issues and problems

	Environmental knowledge grade/number correct*				
Self-reported knowledge	**A (7-8)**	**B (5-6)**	**C (4)**	**D (3)**	**F (0-2)**
A lot	13.5%	18%	10%	8%	7%
A fair amount	72%	57%	59%	52%	40%
Only a little	13.5%	24%	29%	35%	42%
Practically nothing	1%	1%	2%	5%	11%

Of those who answered two or fewer questions correctly, 46% believed that they were fairly knowledgeable about environmental issues and problems.

*Score out of eight general environmental knowledge questions

Combining "a lot" and "a fair amount" as fairly knowledgeable, 85% of those who scored an A grade believed they were fairly knowledgeable about environmental issues compared to 75% who received a B, and 46% who received a failing grade. **This point is important – 46% of those who answered two or fewer questions correctly believed that they were fairly knowledgeable about environmental issues and problems.** This is also interesting because over 60% of this group depend on their own training and education as an information source. Again, this points to the importance of education in helping Minnesota residents to acquire the necessary knowledge to address environmental issues and problems.

In relation to the attitudes questions of the survey (Questions 2A-F), the performance on the environmental knowledge questions did generate some significant results. Approximately 50% of those who received an A and B believed that regulations have not gone far enough to protect wetlands, whereas 35%, 44%, and 40% of those who received a C, D, or F respectively believed that regulations had not gone far enough. On the other hand, 51% and 48% of those who received a C or F respectively indicated that the right balance had been struck.

For endangered animal, plant, and insect species, a clear majority of respondents across each knowledge grade level believe that the right balance has been struck with laws for this issue. On the other hand, 34% of adults with an A grade and 36% of those who scored a B believe that regulation has not gone far enough. Also, 23% of respondents who received a C, 42% who received a D, and 30% scoring an F grade believe that laws have not gone far enough.

For wild or natural areas, while respondents in grades A (53%), B (49%), and D (46%) believed that regulations had not gone far enough to protect such areas, those who received a C (47%) and an F (51%) perceived that a balance had been struck.

The fact that a significant difference was not found for some specific regulations based on knowledge is interesting. In relation to air pollution, a majority of all respondents who received an A, B, D, or F believed that regulations had not gone far enough. Those who received a C grade believed that a balance had been struck. It was also clear that the majority of residents in any grade believed that regulations for fighting water pollution had not gone far enough. In addition, a majority of respondents believed that the correct balance had been attained in protesting Minnesota's cultural sites.

In relation to the sources that Minnesota respondents with the various knowledge grades use for environmental information, training/own education is clearly significant. Because this is high for all groups, an individual's education should be recognized as an important factor when disseminating environmental information. Other sources that are significant include ELCs, environmental groups, magazines, radio, government agencies, and the Internet. The Internet also plays an important role for all groups.

Figure 37. Minnesota residents' environmental knowledge score compared to sources used "a lot" and "some" for environmental information

Source of information	Environmental knowledge grade				
	A (7-8)	B (5-6)	C (4)	D (3)	F (0-2)
ELCs	85%	79%	81%	77%	71%
Environmental groups	84%	61%	67%	64%	60%
Magazines	83%	77%	70%	68%	67%
Own education	80%	75%	68%	65%	61%
Radio	75%	66%	59%	60%	53%
Govt. agencies	68%	61%	66%	58%	51%
Internet	49%	39%	43%	32%	29%

* Score out of eight general environmental knowledge questions

Minnesota residents perform approximately half of the environmental behaviors surveyed on a regular basis, and about a third sometimes, as shown in Part 3 Environmental Behaviors. Although knowledge did play a part in people's environmental behaviors, it was not consistent nor could it be considered the lone factor in the behaviors taken. For example, males overall scored higher on the environmental knowledge questions yet more females perform environmental activities. Also a number of the environmental behaviors surveyed have benefits other than environmental such as money savings and adherence to state regulations which may outweigh the environmental factors. This suggests that other factors may come into play in addition to environmental knowledge in the creation of environmentally sensitive behaviors. This suggests that other factors may also come into play in addition to environmental knowledge in the creation of environmentally sensitive behaviors.

In addition, respondents who received an A grade were significantly more willing to pay extra for gasoline if they knew it would improve the environment compared to the respondents who received other grades (84% of those who received an A down to 57% for those who received an F). Thirty-six percent of residents who received an A were willing to pay an extra 6¢ to 20¢ per gallon, while 30% and 28% respectively of those who received a B and D were willing to pay an extra 1¢ to 5¢ per gallon. Thirty percent of those who received a C and 37% of those who received an F would not pay extra for a gallon of gas, but 70% and 63% of those who received these grades respectively would be willing to pay extra for gasoline if they knew it would significantly improve the environment.

Figure 38. Comparison of environmental knowledge score* to environmental activities undertaken frequently by residents

Environmental activity	Environmental knowledge grade				
	A (7-8)	B (5-6)	C (4)	D (3)	F (0-2)
Conserve water	63%	62%	60%	59%	48%
Consider a candidate's record	56%	51%	38%	36%	31%
Learn about environment	50%	43%	36%	30%	21%
Donate money	15%	12%	5%	6%	7%

* Score out of eight general environmental knowledge questions.

Other scales of measurement

To assist in the data analysis and to examine possible influences of general environmental knowledge on attitudes and behaviors, two other scales were developed – an attitude scale and a behavior scale.

Environmental attitude scale. An environmental attitude scale was constructed with questions 2A to 2F. All items were re-coded to a three-point scale spanning anti- to pro-environmental, and an overall average response to all component items was used to develop the cumulative scale. Thus the range of the scale was one to three, and the respondents were judged to have a low (1 to 1.99), medium (2 to 2.49), or high (2.50 to 3) environmental attitude.

Environmental behavior scale. This scale was constructed in a manner similar to the attitude scale – the component items were re-coded in a three-point anti- to pro-environmental direction, then averaged for the overall scale results, for a range running one to three. The categories were split as follows: low (1 to 1.99), medium (2 to 2.49), and high (2.50 to 3).

Environmental knowledge, attitude, and behaviors. Using the three scales, it is clear that a connection exists between Minnesotans' general environmental knowledge and their self-reported attitudes and behaviors. Respondents who received a higher grade in general environmental

knowledge were significantly more likely to have a positive environmental attitude (Figure 39). However, even with low environmental knowledge, respondents tend to have a relatively positive (medium and high) attitude towards the environment. This may point to other factors, besides knowledge, that can help create positive attitudes. Various research studies have shown that other factors, such as environmental experiences, assist in positive environmental attitude development.

Figure 39. Environmental knowledge grades and environmental attitude for Minnesota residents

	Environmental knowledge grade				
Attitude scale	**A (7-8)**	**B (5-6)**	**C (4)**	**D (3)**	**F (0-2)**
Low (1-1.99)	7%	17%	17%	16%	13%
Medium (2-2.49)	38%	29%	41%	29%	40%
High (2.50-3)	58%	55%	42%	55%	46%

Interestingly though, Minnesota residents across the various grade levels were more likely to perform medium pro-environmental behaviors than exhibit high pro-environmental behaviors. In other words, Minnesota residents who had average, above average, or excellent knowledge were more likely to only perform environmental activities sometimes rather than frequently.

For instance, Figure 40 shows that most respondents perform medium pro-environmental behaviors. Yet, the results in this figure also illustrate an interesting point and question. If a higher level of environmental behaviors are to be promoted, what factors are required to move citizens from the medium level to the high level? Whatever the case, Minnesota residents are willing to do environmentally friendly behaviors but will they have the knowledge base to do them correctly? Environmental education is an integral component in assuring an environmentally literate Minnesota.

Figure 40. Environmental knowledge grades and environmental behaviors for Minnesota residents

	Environmental knowledge grade				
Behavior scale	**A (7-8)**	**B (5-6)**	**C (4)**	**D (3)**	**F (0-2)**
Low (1-1.99)	7%	11%	12%	10%	22%
Medium (2-2.49)	57%	58%	63%	71%	60%
High (2.50-3)	35%	31%	25%	19%	17%

Appendix A

Survey Instrument

The questions used in this survey came either directly or were adapted from the following sources: various National Environmental Education Training Foundation/Roper Starch Worldwide Surveys, and *the First Pennsylvania Environmental Readiness for the 21st Century Survey.* Questions measured respondents' knowledge, attitudes, and behaviors toward the environment.

Survey instrument

Asterisks (**) indicate the correct answers in the case of knowledge questions and a location for more information on the answer.

Q1) In general, how much do you feel you yourself know about environmental issues and problems? Would you say…

1. A lot
2. A fair amount
3. Only a little
4. Practically nothing

Q2A) I'm going to ask you some questions about environmental laws and regulations. For each area, please tell me if you think the laws and regulations have gone too far, not far enough, or if they have struck the right balance. The first is air pollution. At the present time, do you think laws and regulations for fighting air pollution have gone too far, not far enough, or have struck about the right balance?

1. Gone too far
2. Not far enough
3. Struck about the right balance

Q2B) How about protecting wild or natural areas? (**If needed:** At the present time do you think laws and regulations for protecting wild or natural areas have gone too far, not far enough, or have struck about the right balance?)

1. Gone too far
2. Not far enough
3. Struck about the right balance

Q2C) How about protecting endangered species of plants, animals, and insects? (**If needed:** At the present time, do you think laws and regulations for protecting endangered species of plants, animals, and insects have gone too far, not far enough, or have struck about the right balance?)

1. Gone too far
2. Not far enough
3. Struck about the right balance

Q2D) How about protecting wetland areas? (**If needed:** At the present time, do you think laws and regulations for protecting wetland areas have gone too far, not far enough, or have struck about the right balance?)

1. Gone too far
2. Not far enough
3. Struck about the right balance

Q2E) How about fighting water pollution? (**If needed:** At the present time, do you think laws and regulations for fighting water pollution have gone too far, not far enough, or have struck about the right balance?)

1. Gone too far
2. Not far enough
3. Struck about the right balance

Q2F) How about protecting Minnesota's ancient cultural sites? (**If needed:** At the present time, do you think laws and regulations for protecting Minnesota's ancient cultural sites have gone too far, not far enough, or have struck about the right balance?) (**If needed:** Ancient cultural sites would include places like burial grounds and important religious or spiritual sites to indigenous or native peoples.)

1. Gone too far
2. Not far enough
3. Struck about the right balance

Q3) The next group of questions is about issues that have been covered in the media in the past two years or so. They are designed to tell us how much accurate information people are getting from television, newspapers, magazines, and other sources. Each question has four possible answers. If you don't know the answer, you can just state that you don't know. First, what is the *most common* cause of pollution of streams, rivers, and oceans? Is it...

1. Dumping of garbage by cities
2. Surface water running off yards, city streets, paved lots, and farm fields**
3. Trash washed into the ocean from beaches
4. Waste dumped by factories

** U.S. Environmental Protection Agency, EPA841-F-96-004A: *http://www.epa.gov/OWOW/NPS/facts/point1.htm*

Q4) Which of the following is a renewable resource? Is it...

1. Oil
2. Iron ore
3. Trees**
4. Coal

** U.S. Environmental Protection Agency: *http://www.epa.gov/epaoswer/osw/kids/quest/pdf/03factsh.pdf*

Q5) What do you think is the main cause of global climate change, that is, the warming of the planet Earth? Is it…

1. A recent increase in oxygen in the atmosphere
2. Sunlight radiating more strongly through a hole in the upper ozone layer
3. More carbon emissions from autos, homes, and industry**
4. Increased activity from volcanoes worldwide
5. **If volunteered:** Doesn't believe there is/will be global climate change

** U.S. Global Climate Change Information Office: *http://www.gcrio.org/gwcc/part1.html*

Q6) Carbon monoxide is a major contributor to air pollution in the U.S. Which of the following is the biggest source of carbon monoxide? Is it…

1. Factories and businesses
2. People breathing
3. Motor vehicles**
4. Trees

** U.S. Environmental Protection Agency: *http://www.epa.gov/otaq/03-co.htm* and Union of Concerned Scientists: *http://www.ucsusa.org/vehicles/brief.problem.html*

Q7) Some scientists have expressed concern that chemicals and certain minerals accumulate in the human body at dangerous levels. Do these chemicals and minerals enter the body primarily through…

1. Breathing air
2. Living near toxic waste dumps
3. Household cleaning products
4. Drinking water**

** U.S. Geological Survey: *http://water.usgs.gov/pubs/FS/fs-027-01/* and U.S. Environmental Protection Agency: *http://www.epa.gov/OGWDW/wot/howsafe.html*

Q8) How is most of the electricity in the U.S. generated? Is it…

1. By burning fossil fuels, (**If asked:** such as coal, oil)**
2. With nuclear power
3. Through solar energy
4. At hydro electric power plants

** U.S. Department of Energy: *http://www.eia.doe.gov/cneaf/electricity/epav1/elecprod.html*

Q9) Which of the following is the best at filtering (or cleaning) water?

1. Forests
2. City storm drains
3. Wetlands**
4. Lakes

**Minnesota Department of Natural Resources: *http://www.dnr.state.mn.us/wetlands/benefits.html*

Q10) Many communities are concerned about running out of room in their community trash dumps and landfills? Is the greatest source of landfill material…

1. Disposable diapers
2. Lawn and garden clippings, trimmings, and leaves
3. Paper products including newspapers, cardboard, and packing**
4. Glass and plastic bottles and aluminum and steel cans

** U.S. Environmental Protection Agency: *http://www.epa.gov/epaoswer/non-hw/muncpl/report-00/report-00.pdf*

Q11A) As you may know, urban sprawl is when a large city and its surrounding suburbs are developed in a way that leaves a lot of space between homes and businesses. Please tell me if you think the following statements are true or false. Generally speaking, urban sprawl makes it more expensive to develop municipal sewer systems.

1. True**
2. False
3. **If volunteered:** it depends

** Sierra Club Sprawl Report: *www.sierraclub.org/sprawl/report98/minneapolisstpaul.asp*

Q11B) Urban sprawl generally makes it more expensive to develop roads and freeways. (**If needed:** True or False?) (**If needed:** Urban sprawl is when a large city and its surrounding suburbs are developed in a way that leaves a lot of space between homes and businesses.)

1. True**
2. False
3. **If volunteered:** it depends

** Sierra Club Sprawl Report: *www.sierraclub.org/sprawl/report98/minneapolisstpaul.asp*

Q11C) Urban sprawl generally helps people spend less time driving. (**If needed:** True or False?) (**If needed:** Urban sprawl is when a large city and its surrounding suburbs are developed in a way that leaves a lot of space between homes and businesses.)

1. True
2. False**
3. **If volunteered:** it depends

** Sierra Club Sprawl Report: *www.sierraclub.org/sprawl/report98/minneapolisstpaul.asp*

Q11D) Urban sprawl generally results in the loss of farmland. (**If needed:** True or False?) (**If needed:** Urban sprawl is when a large city and its surrounding suburbs are developed in a way that leaves a lot of space between homes and businesses.)

1. True**
2. False
3. **If volunteered:** it depends

** Sierra Club Sprawl Report: *www.sierraclub.org/sprawl/report98/minneapolisstpaul.asp*

Q11E) Urban sprawl generally increases the variety of wildlife. **(If needed:** True or False?) **(If needed:** Urban sprawl is when a large city and its surrounding suburbs are developed in a way that leaves a lot of space between homes and businesses.)

1. True
2. False**
3. **If volunteered:** it depends

** Sierra Club Sprawl Report: *www.sierraclub.org/sprawl/report98/minneapolisstpaul.asp*

Q12) A 1998 report ranked 30 of the nation's urban areas from 1 to 30, where 1 was the area with the most urban sprawl and 30 was the area with the least (urban sprawl). In the report, do you think Minneapolis-St. Paul ranked: **(If needed:** Urban sprawl is when a large city and its surrounding suburbs are developed in a way that leaves a lot of space between homes and businesses.)

1. 4th
2. 8th**
3. 13th
4. 21st
5. 28th?

** Sierra Club Sprawl Report: *www.sierraclub.org/sprawl/report98/minneapolisstpaul.asp*

Q13) Now thinking about genetically modified foods, do you think genetically modified foods are good for the natural environment, or bad (for the environment), or haven't you thought much about it. **(Note:** If respondent asks, genetically modified foods are also called genetically modified organisms and GMOs.)

1. Good
2. Bad
3. Haven't thought much about it/don't know
4. **If volunteered:** It depends/good in some cases, bad in others
5. **If volunteered:** Neutral/Neither good nor bad
6. **If volunteered:** Scientists don't know

Q14) Please tell me if you think the following statement is true or false. Most industrial and household chemicals are routinely tested and approved for safe use by a federal agency.

1. True
2. False**

** Environmental Defense: *http://www.environmentaldefense.org/system/templates/page/issue.cfm?subnav=20*

Q15A) The following question is about environmental education for children in grades K through 12. Please answer with yes, no, or don't know. Do you think schools should provide environmental education in kindergarten through 12th grade?

1. Yes
2. No **(Skip to Q16A)**
3. **If volunteered:** it depends

Q15B) Who do you think should pay for environmental education provided in the schools? Should it be…

1. Parents
2. Businesses
3. The schools through their normal budgeting processes
4. A state fund for environmental education
5. **If volunteered:** some other source

Q16A) People get information about the environment from a variety of sources. Please tell me if you get a lot, some, or no information from each of the following sources. Friends and relatives? (**If needed:** do you get a lot, some, or no information about the environment from friends and relatives?)

1. A lot
2. Some
3. No information

Q16B) Newspapers? (**If needed:** do you get a lot, some, or no information about the environment from newspapers?) **Code as "no information" if respondent volunteers that he/she does not read newspapers.**

1. A lot
2. Some
3. No information

Q16C) Magazines? (**If needed:** do you get a lot, some, or no information about the environment from magazines?)

1. A lot
2. Some
3. No information

Q16D) Television? (**If needed:** do you get a lot, some, or no information about the environment from TV?)

1. A lot
2. Some
3. No information

Q16E) Radio? (**If needed:** do you get a lot, some, or no information about the environment from the radio?)

1. A lot
2. Some
3. No information

Q16F) Government agencies? (**If needed:** do you get a lot, some, or no information about the environment from government agencies?)

1. A lot
2. Some
3. No information

Q16G) The Internet? (**If needed:** do you get a lot, some, or no information about the environment from the Internet?)

1. A lot
2. Some
3. No information

Q16H) Environmental groups? (**If needed:** do you get a lot, some, or no information about the environment from environmental groups?)

1. A lot
2. Some
3. No information

Q16I) Information that children you know bring home from school? This includes any children you might know, not just children of your own. (**If needed:** do you get a lot, some, or no information about the environment from what children that you know bring home from school?)

1. A lot
2. Some
3. No information

Q16J) Your own formal training or education? (**If needed:** do you get a lot, some, or no information about the environment from your own formal training or education?) (**If needed:** this includes education in schools, at colleges and universities, and any training you might receive at work or as a volunteer.)

1. A lot
2. Some
3. No information

Q16K) Environmental learning centers, including nature centers, parks, and zoos? (**If needed:** do you get a lot, some, or no information about the environment from environmental learning centers?)

1. A lot
2. Some
3. No information

Q17A) Now I would like to ask you about some of the things you may do in your day-to-day life. For each of the following things, would you please tell me whether you never do it, sometimes do it, or frequently do it. Recycle things such as newspapers, cans, and glass?

1. Never
2. Sometimes
3. Frequently

Q17B) Other than recycling, do you try to cut down on the amount of trash and garbage you create? (**If needed:** Do you do things like buying products with less packaging, reuse containers, or try to get your junk mail stopped?)

1. Never
2. Sometimes
3. Frequently

Q17C) Use chemicals in your yard or garden?

1. Never
2. Sometimes (**Skip to Q17E**)
3. Frequently (**Skip to Q17E**)
4. **If volunteered:** does not have yard/garden (**Skip to Q17E**)

Q17D) Do you have a yard or garden? (**Only asked if respondent says "never" to Q17C.**)

1. Yes
2. No

Q17E) Conserve water by turning off water when brushing your teeth?

1. Never
2. Sometimes
3. Frequently

Q17F) Turn off lights and electrical appliances when not in use?

1. Never
2. Sometimes
3. Frequently

Q17G) Use other types of transportation, such as walking, biking, riding the bus, or carpooling instead of driving alone?

1. Never (**Skip to Q17I**)
2. Sometimes (**Skip to Q17I**)
3. Frequently
4. **If volunteered:** does not have a car (**Skip to Q17I**)

Q17H) Do you own a vehicle or know someone who would let you use their vehicle regularly?

1. Yes
2. No (**Only asked if respondent says "frequently" to Q17G.**)

Q17I) Try to learn about the environment or environmental issues?

1. Never
2. Sometimes
3. Frequently

Q17J) Donate money to a group or organization working to protect the environment?

1. Never
2. Sometimes
3. Frequently

Q17K) Consider a candidate's record or stance on protecting the environment when voting?

1. Never
2. Sometimes
3. Frequently

Q17L) Service your vehicle(s) regularly? (**If needed:** Do you never, sometimes, or frequently have your car's oil changed and have the engine tuned up at regular times?) (**If asked:** Some people feel this is an environmental consideration.)

1. Never
2. Sometimes
3. Frequently
4. **If volunteered:** I don't have a car

Q17M) Eat less meat than other people?

1. Never
2. Sometimes
3. Frequently

Q17N) Buy organic foods? (**If needed:** Organic foods are foods grown without the use of chemicals.)

1. Never
2. Sometimes
3. Frequently

Q18A) How important are the following to you in deciding where you live? First, quality of schools. Is this a very important, important, unimportant, or a very unimportant characteristic?

1. Very important
2. Important
3. Unimportant
4. Very unimportant

Q18B) Personal safety? (**If needed:** Is personal safety very important, important, unimportant, or very unimportant to you in deciding where to live?)

1. Very important
2. Important
3. Unimportant
4. Very unimportant

Q18C) Property taxes? (**If needed:** Is property taxes very important, important, unimportant, or very unimportant to you in deciding where to live?)

1. Very important
2. Important
3. Unimportant
4. Very unimportant

Q18D) Distance to work? (**If needed:** Is distance to work very important, important, unimportant, or very unimportant to you in deciding where to live?)

1. Very important
2. Important
3. Unimportant
4. Very unimportant

Q18E) Community spaces, such as parks and natural areas? (**If needed:** Are community spaces such as parks and natural areas very important, important, unimportant, or very unimportant to you in deciding where to live?)

1. Very important
2. Important
3. Unimportant
4. Very unimportant

Q18F) Living on a larger lot? (**If needed:** Is living on a larger lot very important, important, unimportant, or very unimportant to you in deciding where to live?)

1. Very important
2. Important
3. Unimportant
4. Very unimportant

Q19) If you knew it would significantly improve the natural environment, would you be willing to pay extra for gasoline?

1. Yes
2. No (**Skip to Q20**)

Q19A) How much extra would you be willing to pay per gallon of gas (**If needed:** If you knew it would significantly improve the natural environment)? **Enter response in decimals.**

Q19B) If you knew it would significantly improve the natural environment, would you be willing to pay an extra 5 cents per gallon of gas?

1. Yes
2. No (**Skip to Q20**)

Q19C) If you knew it would significantly improve the natural environment, would you be willing to pay an extra 10 cents per gallon of gas?

1. Yes
2. No (**Skip to Q20**)

Q19D) If you knew it would significantly improve the natural environment, would you be willing to pay an extra 20 cents per gallon of gas?

1. Yes
2. No (**Skip to Q20**)

Q19E) If you knew it would significantly improve the natural environment, would you be willing to pay an extra 50 cents per gallon of gas?

1. Yes
2. No (**Skip to Q20**)

Q19F) If you knew it would significantly improve the natural environment, would you be willing to pay an extra dollar per gallon of gas?

1. Yes
2. No

Demographics

Q20) Now I have just a few questions to make sure we interview a representative cross-section of Minnesota residents. First, in what year were you born? 19__

Q21) What is the highest level of education that you have completed?

1. Less than a high school diploma
2. High school grad or GED
3. 2-year degree (AA, AS, professional school if two-year degree)
4. Some college
5. College graduate (4-year degree, BA, BS)
6. Graduate degree (Masters, MA, MS, MD, Ph.D., etc)

Q22) Are you currently enrolled in college?

1. Yes
2. No

Q22A) Counting yourself, how many adults age 18 and older live in your household?

Q24) Do you have any children and/or dependents under the age of 18 who live in your household? (**If needed:** We are looking for children or dependents who live in your household at least 50% of the time.)

1. Yes
2. No (**Skip to Q26**)

Q25A) How many children are there living at home with you that are under 5 years old?

Q25B) How many children are there living at home with you that are 5 to 10 years old?

Q25C) How many children are there living at home with you that are 11 to 17 years old?

Q26) Would you describe the area you live in as a… (**Read list.**)

1. Large city
2. A medium size city
3. A small city
4. A suburban town
5. A small town
6. A rural or farm area

Q26A) How many separate telephone lines with different telephone numbers do you have at the household you are in now? Do not count cellular phones or telephone lines used for faxes or modems. (**If needed:** Some households have set up more than one telephone line so they can be reached by more than one telephone number.)

Q26B) Which of the following best describes your racial or ethnic group?

1. African American
2. American Indian
3. Asian, Asian American, or Pacific Islander
4. White or Caucasian
5. Hispanic, Latino, or Spanish origin
6. Biracial or multiracial
7. Some other group

Q27) In which Minnesota county do you currently live? **(Coded 1 through 87)**

Q30) For statistical purposes only, we need to know your total household income. I am going to read off some income categories. Would you please stop me when I name the category that best describes the combined annual income of your household, including wages or salary, interest, and all other sources before taxes…

1. Under $10,000
2. $10,000 to $19,000
3. $20,000 to $29,000
4. $30,000 to $39,000
5. $40,000 to $49,000
6. $50,000 to $75,000
7. Over $75,000

-7. Refused

-8. Don't know

Q31) **(Ask only if uncertain)** Are you…

1. Male
2. Female

Closer: Thank you for your time and participation!

Appendix B

Methodology

The survey used a random-digit dial sample and randomized selection within the household. Random-digit dialing ensures an equal probability of selection for all residential telephone numbers within a specified locale. The sample of telephone numbers was purchased from Survey Sampling, Incorporated. Randomized selection within the household further equalizes selection probabilities. In this case randomization within the household was attained by selecting the adult with the most recent birthday.

One thousand interviews were completed with adults throughout Minnesota. Given this sample size, relative to the adult population of Minnesota at the time (3,560,000), the sampling error is plus or minus 3.1 percentage points for results with a 50/50 proportional split. That is, if the survey results show 50 percent of the sample answering "yes" and 50 percent answering "no," it is very likely that if we were to survey the entire adult population of Minnesota, the actual percentage of the population who give such answers would be somewhere between 46.9 and 53.1 percent. The sampling error is progressively smaller for results with uneven splits.

Interviewing began on July 2, 2001, and continued through September 26, 2001. Calls were made 9 a.m. to 9 p.m. Monday through Thursday, 9 a.m. to 3 p.m. Friday and Saturday, and 3 p.m. to 8:30 p.m. on Sundays. Interviewing was not conducted on July 4 or September 11, and the interviewing schedule was limited mainly to scheduled call-backs on September 12 to 14. The industry-standard response rate (CASRO RR3) for the study was 55 percent, with a refusal rate of 16 percent.

In the creation of the report, percentages were rounded down if less that 0.5% and rounded up if greater than 0.5%.

Appendix C
Final frequencies

Q1 In general, how much do you feel you yourself know about environmental issues and problems? Would you say...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	112	11.2	11.2	11.2
	2. A fair amount	534	53.4	53.6	64.8
	3. Only a little	305	30.5	30.6	95.4
	4. Practically nothing	46	4.6	4.6	100.0
	Total	997	99.7	100.0	
Missing	Don't know	3	.3		
Total		1000	100.0		

Q2A At the present time, do you think laws and regulations for fighting air pollution have gone too far, not far enough, or have struck the right balance?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Gone too far	28	2.8	2.9	2.9
	2. Not far enough	481	48.1	50.5	53.4
	3. Struck about the right balance	444	44.4	46.6	100.0
	Total	953	95.3	100.0	
Missing	Don't know	46	4.6		
	Refused	1	.1		
	Total	47	4.7		
Total		1000	100.0		

Q2B How about protecting wild or natural areas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Gone too far	124	12.4	12.8	12.8
	2. Not far enough	428	42.8	44.3	57.1
	3. Struck about the right balance	414	41.4	42.9	100.0
	Total	966	96.6	100.0	
Missing	Don't know	30	3.0		
	Refused	4	.4		
	Total	34	3.4		
Total		1000	100.0		

Q2C How about protecting endangered species of plants, animals, and insects?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Gone too far	153	15.3	16.4	16.4
	2. Not far enough	309	30.9	33.1	49.5
	3. Struck about the right balance	472	47.2	50.5	100.0
	Total	934	93.4	100.0	
Missing	Don't know	63	6.3		
	Refused	3	.3		
	Total	66	6.6		
Total		1000	100.0		

Q2D How about protecting wetland areas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Gone too far	117	11.7	12.9	12.9
	2. Not far enough	399	39.9	44.0	56.9
	3. Struck about the right balance	391	39.1	43.1	100.0
	Total	907	90.7	100.0	
Missing	Don't know	90	9.0		
	Refused	3	.3		
	Total	93	9.3		
Total		1000	100.0		

Q2E How about fighting water pollution?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Gone too far	14	1.4	1.5	1.5
	2. Not far enough	693	69.3	73.5	75.0
	3. Struck about the right balance	236	23.6	25.0	100.0
	Total	943	94.3	100.0	
Missing	Don't know	55	5.5		
	Refused	2	.2		
	Total	57	5.7		
Total		1000	100.0		

Q2F How about protecting Minnesota's ancient cultural sites?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Gone too far	62	6.2	8.3	8.3
	2. Not far enough	241	24.1	32.4	40.8
	3. Struck about the right balance	440	44.0	59.2	100.0
	Total	743	74.3	100.0	
Missing	Don't know	255	25.5		
	Refused	2	.2		
	Total	257	25.7		
Total		1000	100.0		

Q3 What is the most common cause of pollution of streams, rivers and oceans?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Dumping of garbage by cities	50	5.0	5.5	5.5
	2. Surface water running off yards, city streets, paved lots and farm fields	518	51.8	57.3	62.8
	3. Trash washed into the ocean from beaches	20	2.0	2.2	65.0
	4. Waste dumped by factories	316	31.6	35.0	100.0
	Total	904	90.4	100.0	
Missing	Don't know	95	9.5		
	Refused	1	.1		
	Total	96	9.6		
Total		1000	100.0		

Q4 Which of the following is a renewable resource? Is it...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Oil	47	4.7	5.3	5.3
	2. Iron ore	38	3.8	4.3	9.6
	3. Trees	746	74.6	84.7	94.3
	4. Coal	50	5.0	5.7	100.0
	Total	881	88.1	100.0	
Missing	Don't know	115	11.5		
	Refused	4	.4		
	Total	119	11.9		
Total		1000	100.0		

Q5 What do you think is the main cause of global climate change, that is, the warming of the planet earth?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A recent increase in oxygen in the atmosphere	7	.7	.8	.8
	2. Sunlight radiating more strongly through a hole in the upper ozone ...	255	25.5	29.1	29.9
	3. More carbon emissions from autos, homes and industry	517	51.7	59.1	89.0
	4. Increased activity from volcanoes worldwide	37	3.7	4.2	93.3
	5. IF VOLUNTEERED: Doesn't believe there is/will be global climate...	59	5.9	6.7	100.0
	Total	875	87.5	100.0	
Missing	Don't know	118	11.8		
	Refused	7	.7		
	Total	125	12.5		
Total		1000	100.0		

Q6 Carbon monoxide is a major contributor to air pollution in the U.S. Which of the following is the biggest source of carbon monoxide? Is it...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Factories and businesses	219	21.9	23.2	23.2
	2. People breathing	15	1.5	1.6	24.8
	3. Motor vehicles	695	69.5	73.6	98.4
	4. Trees	15	1.5	1.6	100.0
	Total	944	94.4	100.0	
Missing	Don't know	55	5.5		
	Refused	1	.1		
	Total	56	5.6		
Total		1000	100.0		

Q7 Some scientists have expressed concern that chemicals and minerals accumulate in the body at dangerous levels. Do these chemicals and minerals enter the body primarily through...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Breathing air	262	26.2	33.5	33.5
	2. Living near toxic waste dumps	107	10.7	13.7	47.2
	3. Household cleaning products	116	11.6	14.9	62.1
	4. Drinking water	296	29.6	37.9	100.0
	Total	781	78.1	100.0	
Missing	Don't know	212	21.2		
	Refused	7	.7		
	Total	219	21.9		
Total		1000	100.0		

Q8 How is most of the electricity in the U.S. generated? Is it...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. By burning fossil fuels, (if asked, such as coal, oil)	410	41.0	45.9	45.9
	2. With nuclear power	152	15.2	17.0	62.9
	3. Through solar energy	10	1.0	1.1	64.1
	4. At hydro electric power plants	321	32.1	35.9	100.0
	Total	893	89.3	100.0	
Missing	Don't know	106	10.6		
	Refused	1	.1		
	Total	107	10.7		
Total		1000	100.0		

Q9 Which of the following is the best at filtering (or cleaning) water?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Forests	204	20.4	26.9	26.9
	2. City storm drains	39	3.9	5.1	32.1
	3. Wetlands	409	40.9	54.0	86.0
	4. Lakes	106	10.6	14.0	100.0
	Total	758	75.8	100.0	
Missing	Don't know	240	24.0		
	Refused	2	.2		
	Total	242	24.2		
Total		1000	100.0		

Q10 Many communities are concerned about running out of room in their community trash dumps and landfills. Is the greatest source of landfill material...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Disposable diapers	298	29.8	33.1	33.1
	2. Lawn and garden clippings, trimmings and leaves	60	6.0	6.7	39.7
	3. Paper products including newspapers, cardboard and packing	259	25.9	28.7	68.5
	4. Glass and plastic bottles and aluminum and steel cans	284	28.4	31.5	100.0
	Total	901	90.1	100.0	
Missing	Don't know	96	9.6		
	Refused	3	.3		
	Total	99	9.9		
Total		1000	100.0		

Q11A Generally speaking, urban sprawl makes it more expensive to develop municipal sewer systems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. True	743	74.3	81.2	81.2
	2. False	168	16.8	18.4	99.6
	3. If volunteered: it depends	4	.4	.4	100.0
	Total	915	91.5	100.0	
Missing	Don't know	85	8.5		
Total		1000	100.0		

Q11B Urban sprawl generally makes it more expensive to develop roads and freeways

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. True	744	74.4	78.3	78.3
	2. False	200	20.0	21.1	99.4
	3. If volunteered: it depends	6	.6	.6	100.0
	Total	950	95.0	100.0	
Missing	Don't know	48	4.8		
	Refused	2	.2		
	Total	50	5.0		
Total		1000	100.0		

Q11C Urban sprawl generally helps people spend less time driving

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. True	133	13.3	13.8	13.8
	2. False	819	81.9	85.0	98.8
	3. If volunteered: it depends	12	1.2	1.2	100.0
	Total	964	96.4	100.0	
Missing	Don't know	34	3.4		
	Refused	2	.2		
	Total	36	3.6		
Total		1000	100.0		

Q11D Urban sprawl generally results in the loss of farmland

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. True	900	90.0	92.6	92.6
	2. False	70	7.0	7.2	99.8
	3. If volunteered: it depends	2	.2	.2	100.0
	Total	972	97.2	100.0	
Missing	Don't know	27	2.7		
	Refused	1	.1		
	Total	28	2.8		
Total		1000	100.0		

Q11E Urban sprawl generally increases the variety of wildlife

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. True	115	11.5	11.9	11.9
	2. False	847	84.7	87.5	99.4
	3. If volunteered: it depends	6	.6	.6	100.0
	Total	968	96.8	100.0	
Missing	Don't know	31	3.1		
	Refused	1	.1		
	Total	32	3.2		
Total		1000	100.0		

Q12 Minnesota's urban sprawl rank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. 4th	163	16.3	19.1	19.1
	2. 8th	211	21.1	24.7	43.7
	3. 13th	277	27.7	32.4	76.1
	4. 21st	141	14.1	16.5	92.6
	5. 28th?	63	6.3	7.4	100.0
	Total	855	85.5	100.0	
Missing	Don't know	143	14.3		
	Refused	2	.2		
	Total	145	14.5		
Total		1000	100.0		

Q13 Now thinking about genetically modified foods, do you think genetically modified foods are good for the natural environment, or bad (for the environment), or haven't you thought about it much?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Good	125	12.5	12.9	12.9
	2. Bad	335	33.5	34.5	47.4
	3. Haven't thought much about it/don't know	438	43.8	45.2	92.6
	4. IF VOLUNTEERED: It depends/good in some cases, bad in others	22	2.2	2.3	94.8
	5. IF VOLUNTEERED: Neutral/neither good nor bad	37	3.7	3.8	98.7
	6. IF VOLUNTEERED: Scientists don't know	13	1.3	1.3	100.0
	Total	970	97.0	100.0	
Missing	Don't know	30	3.0		
Total		1000	100.0		

Q14 Most industrial and household chemicals are routinely tested and approved for use by a federal agency.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. True	453	45.3	47.1	47.1
	2. False	508	50.8	52.9	100.0
	Total	961	96.1	100.0	
Missing	Don't know	39	3.9		
Total		1000	100.0		

Q15A Do you think schools should provide environmental education in kindergarten through 12th grade?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Yes	905	90.5	91.0	91.0
	2. No	62	6.2	6.2	97.3
	3. IF VOLUNTEERED: It depends	27	2.7	2.7	100.0
	Total	994	99.4	100.0	
Missing	Don't know	5	.5		
	Refused	1	.1		
	Total	6	.6		
Total		1000	100.0		

Q15B Who do you think should be the primary source of funding for environmental education in the schools? Should it be...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Parents	28	2.8	3.1	3.1
	2. Businesses	77	7.7	8.5	11.5
	3. The schools through their normal budgeting processes	235	23.5	25.8	37.4
	4. A state fund for environmental education	527	52.7	57.9	95.3
	5. IF VOLUNTEERED: some other source	43	4.3	4.7	100.0
	Total	910	91.0	100.0	
Missing	Don't know	21	2.1		
	Refused	1	.1		
	System	68	6.8		
	Total	90	9.0		
Total		1000	100.0		

Q16A Information from friends or relatives?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	93	9.3	9.3	9.3
	2. Some	521	52.1	52.4	61.7
	3. No information	381	38.1	38.3	100.0
	Total	995	99.5	100.0	
Missing	Don't know	5	.5		
Total		1000	100.0		

Q16B Information from newspapers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	266	26.6	26.7	26.7
	2. Some	643	64.3	64.5	91.2
	3. No information	88	8.8	8.8	100.0
	Total	997	99.7	100.0	
Missing	Don't know	2	.2		
	Refused	1	.1		
	Total	3	.3		
Total		1000	100.0		

Q16C Information from magazines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	178	17.8	17.8	17.8
	2. Some	535	53.5	53.6	71.4
	3. No information	285	28.5	28.6	100.0
	Total	998	99.8	100.0	
Missing	Refused	2	.2		
Total		1000	100.0		

Q16D Information from television?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	317	31.7	31.8	31.8
	2. Some	592	59.2	59.4	91.2
	3. No information	88	8.8	8.8	100.0
	Total	997	99.7	100.0	
Missing	Don't know	3	.3		
Total		1000	100.0		

Q16E Information from radio?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	113	11.3	11.3	11.3
	2. Some	498	49.8	49.8	61.2
	3. No information	388	38.8	38.8	100.0
	Total	999	99.9	100.0	
Missing	Don't know	1	.1		
Total		1000	100.0		

Q16F Information from government agencies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	100	10.0	10.1	10.1
	2. Some	490	49.0	49.5	59.6
	3. No information	400	40.0	40.4	100.0
	Total	990	99.0	100.0	
Missing	Don't know	10	1.0		
Total		1000	100.0		

Q16G Information from the Internet?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	103	10.3	10.4	10.4
	2. Some	263	26.3	26.5	36.9
	3. No information	625	62.5	63.1	100.0
	Total	991	99.1	100.0	
Missing	Don't know	9	.9		
Total		1000	100.0		

Q16H Information from environmental groups?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	223	22.3	22.5	22.5
	2. Some	447	44.7	45.1	67.5
	3. No information	322	32.2	32.5	100.0
	Total	992	99.2	100.0	
Missing	Don't know	8	.8		
Total		1000	100.0		

Q16I Information that children you know bring home from school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	65	6.5	6.6	6.6
	2. Some	410	41.0	41.6	48.2
	3. No information	511	51.1	51.8	100.0
	Total	986	98.6	100.0	
Missing	Don't know	13	1.3		
	Refused	1	.1		
	Total	14	1.4		
Total		1000	100.0		

Q16J Information from your own formal training or education?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	164	16.4	16.4	16.4
	2. Some	523	52.3	52.4	68.8
	3. No information	311	31.1	31.2	100.0
	Total	998	99.8	100.0	
Missing	Don't know	2	.2		
Total		1000	100.0		

Q16K Information from environmental learning centers, including nature centers, parks, and zoos?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. A lot	247	24.7	24.9	24.9
	2. Some	523	52.3	52.7	77.5
	3. No information	223	22.3	22.5	100.0
	Total	993	99.3	100.0	
Missing	Don't know	7	.7		
Total		1000	100.0		

Q17A Recycle things such as newspapers, cans, and glass?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	47	4.7	4.7	4.7
	2. Sometimes	146	14.6	14.6	19.3
	3. Frequently	807	80.7	80.7	100.0
	Total	1000	100.0	100.0	

Q17B Other than recycling, do you try to cut down on the amount of trash and garbage you create?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	101	10.1	10.1	10.1
	2. Sometimes	348	34.8	34.9	45.0
	3. Frequently	548	54.8	55.0	100.0
	Total	997	99.7	100.0	
Missing	Not applicable	1	.1		
	Don't know	2	.2		
	Total	3	.3		
Total		1000	100.0		

Q17C Use chemicals in your yard or garden?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	493	49.3	49.4	49.4
	2. Sometimes	424	42.4	42.5	92.0
	3. Frequently	53	5.3	5.3	97.3
	4. IF VOLUNTEERED: does not have yard/garden	27	2.7	2.7	100.0
	Total	997	99.7	100.0	
Missing	Don't know	2	.2		
	Refused	1	.1		
	Total	3	.3		
Total		1000	100.0		

Q17D Do you have a yard or garden?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Yes	405	40.5	82.2	82.2
	2. No	88	8.8	17.8	100.0
	Total	493	49.3	100.0	
Missing	System	507	50.7		
Total		1000	100.0		

Q17C1 Of those who have yard/garden: Use chemicals?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	405	40.5	45.9	45.9
	Sometimes	424	42.4	48.1	94.0
	Frequently	53	5.3	6.0	100.0
	Total	882	88.2	100.0	
Missing	System	118	11.8		
Total		1000	100.0		

Q17E Conserve water by turning off water when brushing your teeth?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	206	20.6	20.6	20.6
	2. Sometimes	214	21.4	21.4	42.1
	3. Frequently	578	57.8	57.9	100.0
	Total	998	99.8	100.0	
Missing	Not applicable	1	.1		
	Don't know	1	.1		
	Total	2	.2		
Total		1000	100.0		

Q17F Turn off lights and electrical appliances when not in use?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	9	.9	.9	.9
	2. Sometimes	98	9.8	9.8	10.7
	3. Frequently	893	89.3	89.3	100.0
	Total	1000	100.0	100.0	

Q17G Use other types of transportation, such as walking, biking, riding the bus, or carpooling?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	399	39.9	40.0	40.0
	2. Sometimes	389	38.9	39.0	79.0
	3. Frequently	195	19.5	19.6	98.6
	4. IF VOLUNTEERED: does not have a car	14	1.4	1.4	100.0
	Total	997	99.7	100.0	
Missing	Don't know	2	.2		
	Refused	1	.1		
	Total	3	.3		
Total		1000	100.0		

Q17H Do you own a vehicle or know someone who would let you use their vehicle regularly?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Yes	176	17.6	90.3	90.3
	2. No	19	1.9	9.7	100.0
	Total	195	19.5	100.0	
Missing	System	805	80.5		
Total		1000	100.0		

Q17G1 Of those with access to a car: Use other transportation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	399	39.9	41.4	41.4
	Sometimes	389	38.9	40.4	81.7
	Frequently	176	17.6	18.3	100.0
	Total	964	96.4	100.0	
Missing	System	36	3.6		
Total		1000	100.0		

Q17I Try to learn about the environment or environmental issues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	92	9.2	9.2	9.2
	2. Sometimes	562	56.2	56.3	65.5
	3. Frequently	344	34.4	34.5	100.0
	Total	998	99.8	100.0	
Missing	Don't know	2	.2		
Total		1000	100.0		

Q17J Donate money to a group or organization working to protect the environment?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	434	43.4	43.5	43.5
	2. Sometimes	479	47.9	48.0	91.6
	3. Frequently	84	8.4	8.4	100.0
	Total	997	99.7	100.0	
Missing	Don't know	3	.3		
Total		1000	100.0		

Q17K Consider a candidate's record or stance on protecting the environment when voting?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	184	18.4	18.7	18.7
	2. Sometimes	396	39.6	40.2	58.9
	3. Frequently	405	40.5	41.1	100.0
	Total	985	98.5	100.0	
Missing	Not applicable	7	.7		
	Don't know	7	.7		
	Refused	1	.1		
	Total	15	1.5		
Total		1000	100.0		

Q17L Service your vehicle(s) regularly?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	6	.6	.6	.6
	2. Sometimes	86	8.6	8.9	9.5
	3. Frequently	862	86.2	89.3	98.9
	4. IF VOLUNTEERED: I don't have a car	11	1.1	1.1	100.0
	Total	965	96.5	100.0	
Missing	Don't know	2	.2		
	System	33	3.3		
	Total	35	3.5		
Total		1000	100.0		

Q17M Eat less meat than most other people?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	360	36.0	37.0	37.0
	2. Sometimes	344	34.4	35.4	72.4
	3. Frequently	269	26.9	27.6	100.0
	Total	973	97.3	100.0	
Missing	Not applicable	1	.1		
	Don't know	26	2.6		
	Total	27	2.7		
Total		1000	100.0		

Q17N Buy organic foods?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Never	466	46.6	47.5	47.5
	2. Sometimes	424	42.4	43.2	90.6
	3. Frequently	92	9.2	9.4	100.0
	Total	982	98.2	100.0	
Missing	Not applicable	3	.3		
	Don't know	15	1.5		
	Total	18	1.8		
Total		1000	100.0		

Q18A How important are the following to you in deciding where you live? Quality of schools?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Very important	435	43.5	44.7	44.7
	2. Important	302	30.2	31.0	75.7
	3. Unimportant	174	17.4	17.9	93.6
	4. Very unimportant	62	6.2	6.4	100.0
	Total	973	97.3	100.0	
Missing	Not applicable	23	2.3		
	Don't know	4	.4		
	Total	27	2.7		
Total		1000	100.0		

Q18B Personal safety?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Very important	615	61.5	61.8	61.8
	2. Important	348	34.8	35.0	96.8
	3. Unimportant	25	2.5	2.5	99.3
	4. Very unimportant	7	.7	.7	100.0
	Total	995	99.5	100.0	
Missing	Don't know	5	.5		
Total		1000	100.0		

Q18C Property taxes?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Very important	256	25.6	26.1	26.1
	2. Important	525	52.5	53.5	79.5
	3. Unimportant	185	18.5	18.8	98.4
	4. Very unimportant	16	1.6	1.6	100.0
	Total	982	98.2	100.0	
Missing	Not applicable	11	1.1		
	Don't know	7	.7		
	Total	18	1.8		
Total		1000	100.0		

Q18D Distance to work?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Very important	198	19.8	21.9	21.9
	2. Important	485	48.5	53.6	75.5
	3. Unimportant	201	20.1	22.2	97.7
	4. Very unimportant	21	2.1	2.3	100.0
	Total	905	90.5	100.0	
Missing	Not applicable	90	9.0		
	Don't know	5	.5		
	Total	95	9.5		
Total		1000	100.0		

Q18E Community spaces, such as parks and natural areas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Very important	310	31.0	31.3	31.3
	2. Important	524	52.4	52.9	84.2
	3. Unimportant	146	14.6	14.7	99.0
	4. Very unimportant	10	1.0	1.0	100.0
	Total	990	99.0	100.0	
Missing	Not applicable	4	.4		
	Don't know	6	.6		
	Total	10	1.0		
Total		1000	100.0		

Q18F Living on a larger lot?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Very important	204	20.4	20.8	20.8
	2. Important	388	38.8	39.6	60.3
	3. Unimportant	347	34.7	35.4	95.7
	4. Very unimportant	42	4.2	4.3	100.0
	Total	981	98.1	100.0	
Missing	Not applicable	11	1.1		
	Don't know	8	.8		
	Total	19	1.9		
Total		1000	100.0		

Q19 If you knew it would significantly improve the natural environment, would you be willing to pay extra for gasoline?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	336	33.6	71.2	71.2
	No	136	13.6	28.8	100.0
	Total	472	47.2	100.0	
Missing	Not applicable	5	.5		
	Don't know	9	.9		
	Refused	2	.2		
	System	512	51.2		
	Total	528	52.8		
Total		1000	100.0		

Q19B If you knew it would significantly improve the natural environment, would you be willing to pay an extra 5 cents per gallon of gas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	362	36.2	72.5	72.5
	No	137	13.7	27.5	100.0
	Total	499	49.9	100.0	
Missing	Don't know	12	1.2		
	Refused	1	.1		
	System	488	48.8		
	Total	501	50.1		
Total		1000	100.0		

Q19C If you knew it would significantly improve the natural environment, would you be willing to pay an extra 10 cents per gallon of gas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	203	20.3	57.8	57.8
	No	148	14.8	42.2	100.0
	Total	351	35.1	100.0	
Missing	Don't know	11	1.1		
	System	638	63.8		
	Total	649	64.9		
Total		1000	100.0		

Q19A How much extra would you be willing to pay per gallon of gas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.01	7	.7	2.1	2.1
	.02	11	1.1	3.3	5.4
	.03	8	.8	2.4	7.7
	.04	4	.4	1.2	8.9
	.05	62	6.2	18.5	27.4
	.06	1	.1	.3	27.7
	.07	1	.1	.3	28.0
	.08	1	.1	.3	28.3
	.09	1	.1	.3	28.6
	.10	59	5.9	17.6	46.1
	.13	1	.1	.3	46.4
	.15	17	1.7	5.1	51.5
	.20	21	2.1	6.3	57.7
	.25	32	3.2	9.5	67.3
	.30	6	.6	1.8	69.0
	.38	1	.1	.3	69.3
	.40	4	.4	1.2	70.5
	.50	35	3.5	10.4	81.0
	.60	1	.1	.3	81.3
	.65	1	.1	.3	81.5
	.70	2	.2	.6	82.1
	.75	2	.2	.6	82.7
	.90	1	.1	.3	83.0
	1.00	21	2.1	6.3	89.3
	1.20	1	.1	.3	89.6
	1.40	1	.1	.3	89.9
	1.45	1	.1	.3	90.2
	1.50	3	.3	.9	91.1
	1.80	1	.1	.3	91.4
	2.00	14	1.4	4.2	95.5
	2.25	1	.1	.3	95.8
	2.50	2	.2	.6	96.4
	3.00	4	.4	1.2	97.6
	4.00	3	.3	.9	98.5
	5.00	2	.2	.6	99.1
	6.00	1	.1	.3	99.4
	10.00	2	.2	.6	100.0
	Total	336	33.6	100.0	
Missing	System	664	66.4		
Total		1000	100.0		

Q19D If you knew it would significantly improve the natural environment, would you be willing to pay an extra 20 cents per gallon of gas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	85	8.5	42.5	42.5
	No	115	11.5	57.5	100.0
	Total	200	20.0	100.0	
Missing	Don't know	3	.3		
	System	797	79.7		
	Total	800	80.0		
Total		1000	100.0		

Q19E If you knew it would significantly improve the natural environment, would you be willing to pay an extra 50 cents per gallon of gas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	40	4.0	47.6	47.6
	No	44	4.4	52.4	100.0
	Total	84	8.4	100.0	
Missing	Don't know	1	.1		
	System	915	91.5		
	Total	916	91.6		
Total		1000	100.0		

Q19F If you knew it would significantly improve the natural environment, would you be willing to pay an extra dollar per gallon of gas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	28	2.8	71.8	71.8
	No	11	1.1	28.2	100.0
	Total	39	3.9	100.0	
Missing	Don't know	1	.1		
	System	960	96.0		
	Total	961	96.1		
Total		1000	100.0		

GASQTYPE Environmental gas tax question: format 1 or 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	472	47.2	48.6	48.6
	2.00	499	49.9	51.4	100.0
	Total	971	97.1	100.0	
Missing	System	29	2.9		
Total		1000	100.0		

GASSUM1 Environmental gas tax summary: amount extra willing to pay per gallon (sum)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	273	27.3	28.1	28.1
	.01	7	.7	.7	28.8
	.02	11	1.1	1.1	30.0
	.03	8	.8	.8	30.8
	.04	4	.4	.4	31.2
	.05	221	22.1	22.8	54.0
	.06	1	.1	.1	54.1
	.07	1	.1	.1	54.2
	.08	1	.1	.1	54.3
	.09	1	.1	.1	54.4
	.10	177	17.7	18.2	72.6
	.13	1	.1	.1	72.7
	.15	17	1.7	1.8	74.5
	.20	66	6.6	6.8	81.3
	.25	32	3.2	3.3	84.6
	.30	6	.6	.6	85.2
	.38	1	.1	.1	85.3
	.40	4	.4	.4	85.7
	.50	47	4.7	4.8	90.5
	.60	1	.1	.1	90.6
	.65	1	.1	.1	90.7
	.70	2	.2	.2	90.9
	.75	2	.2	.2	91.1
	.90	1	.1	.1	91.2
	1.00	49	4.9	5.0	96.3
	1.20	1	.1	.1	96.4
	1.40	1	.1	.1	96.5
	1.45	1	.1	.1	96.6
	1.50	3	.3	.3	96.9
	1.80	1	.1	.1	97.0
	2.00	14	1.4	1.4	98.5
	2.25	1	.1	.1	98.6
	2.50	2	.2	.2	98.8
	3.00	4	.4	.4	99.2
	4.00	3	.3	.3	99.5
	5.00	2	.2	.2	99.7
	6.00	1	.1	.1	99.8
	10.00	2	.2	.2	100.0
	Total	971	97.1	100.0	
Missing	System	29	2.9		
Total		1000	100.0		

GASSUM2 Environmental gas tax summary: amount extra willing to pay per gallon (sum - capped at $1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	273	27.3	28.1	28.1
	.01	7	.7	.7	28.8
	.02	11	1.1	1.1	30.0
	.03	8	.8	.8	30.8
	.04	4	.4	.4	31.2
	.05	221	22.1	22.8	54.0
	.06	1	.1	.1	54.1
	.07	1	.1	.1	54.2
	.08	1	.1	.1	54.3
	.09	1	.1	.1	54.4
	.10	177	17.7	18.2	72.6
	.13	1	.1	.1	72.7
	.15	17	1.7	1.8	74.5
	.20	66	6.6	6.8	81.3
	.25	32	3.2	3.3	84.6
	.30	6	.6	.6	85.2
	.38	1	.1	.1	85.3
	.40	4	.4	.4	85.7
	.50	47	4.7	4.8	90.5
	.60	1	.1	.1	90.6
	.65	1	.1	.1	90.7
	.70	2	.2	.2	90.9
	.75	2	.2	.2	91.1
	.90	1	.1	.1	91.2
	1.00	85	8.5	8.8	100.0
	Total	971	97.1	100.0	
Missing	System	29	2.9		
Total		1000	100.0		

GASSUM3 Environmental gas tax summary: amount extra willing to pay per gallon (sum - grouped)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	273	27.3	28.1	28.1
	$0.01 to $0.05	251	25.1	25.8	54.0
	$0.06 to $0.20	265	26.5	27.3	81.3
	$0.21 or more	182	18.2	18.7	100.0
	Total	971	97.1	100.0	
Missing	System	29	2.9		
Total		1000	100.0		

AGE2 Respondent age (grouped)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 to 24	70	7.0	7.0	7.0
	25 to 44	377	37.7	37.9	44.9
	45 to 64	367	36.7	36.9	81.8
	65+	181	18.1	18.2	100.0
	Total	995	99.5	100.0	
Missing	System	5	.5		
Total		1000	100.0		

Q21 What is the highest level of education that you have completed?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than a high school diploma	64	6.4	6.4	6.4
	High school graduate or GED	228	22.8	22.8	29.3
	2 year degree (AA, AS, professional school if 2-year degree	140	14.0	14.0	43.3
	Some college	213	21.3	21.3	64.6
	College graduate (4 year degree, BA, BS)	255	25.5	25.6	90.2
	Graduate degree (Masters, MA, MS, MD, PhD, etc.)	98	9.8	9.8	100.0
	Total	998	99.8	100.0	
Missing	Refused	2	.2		
Total		1000	100.0		

Q22 Are you currently enrolled in college?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Yes	64	6.4	6.9	6.9
	2. No	870	87.0	93.1	100.0
	Total	934	93.4	100.0	
Missing	Refused	2	.2		
	System	64	6.4		
	Total	66	6.6		
Total		1000	100.0		

Q22A Counting yourself, how many adults age 18 or older live in your household?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	267	26.7	26.7	26.7
	2	578	57.8	57.8	84.5
	3	115	11.5	11.5	96.0
	4	28	2.8	2.8	98.8
	5	7	.7	.7	99.5
	6	3	.3	.3	99.8
	Refused	2	.2	.2	100.0
	Total	1000	100.0	100.0	

Q23 Do you have any children or dependents under the age of 18 living in your household?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Yes	376	37.6	37.8	37.8
	2. No	619	61.9	62.2	100.0
	Total	995	99.5	100.0	
Missing	Don't know	1	.1		
	Refused	4	.4		
	Total	5	.5		
Total		1000	100.0		

Q24A How many children are there living at home with you that are under 5 years old?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	240	24.0	63.8	63.8
	1	84	8.4	22.3	86.2
	2	41	4.1	10.9	97.1
	3	10	1.0	2.7	99.7
	5	1	.1	.3	100.0
	Total	376	37.6	100.0	
Missing	System	624	62.4		
Total		1000	100.0		

Q24B How many children are there living at home with you that are 5 to 10 years old?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	209	20.9	55.6	55.6
	1	106	10.6	28.2	83.8
	2	55	5.5	14.6	98.4
	3	6	.6	1.6	100.0
	Total	376	37.6	100.0	
Missing	System	624	62.4		
Total		1000	100.0		

Q24C How many children are there living at home with you that are 11 to 17 years old?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	156	15.6	41.5	41.5
	1	133	13.3	35.4	76.9
	2	70	7.0	18.6	95.5
	3	13	1.3	3.5	98.9
	4	3	.3	.8	99.7
	5	1	.1	.3	100.0
	Total	376	37.6	100.0	
Missing	System	624	62.4		
Total		1000	100.0		

Q25 Would you describe the area you live in as a...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Large city	102	10.2	10.3	10.3
	2. A medium size city	145	14.5	14.6	24.8
	3. A small city	126	12.6	12.7	37.5
	4. A suburban town	235	23.5	23.6	61.2
	5. A small town, or	201	20.1	20.2	81.4
	6. A rural or farm area?	185	18.5	18.6	100.0
	Total	994	99.4	100.0	
Missing	Don't know	1	.1		
	Refused	5	.5		
	Total	6	.6		
Total		1000	100.0		

Q26A How many separate telephone lines with different telephone numbers do you have at the household you are in now?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	840	84.0	84.3	84.3
	2	137	13.7	13.7	98.0
	3	16	1.6	1.6	99.6
	4	4	.4	.4	100.0
	Total	997	99.7	100.0	
Missing	Refused	3	.3		
Total		1000	100.0		

Q26B Which of the following best describes your racial or ethnic group? Would you say...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	African American or Black	19	1.9	1.9	1.9
	American Indian	8	.8	.8	2.7
	Asian, Asian American or Pacific Islander	8	.8	.8	3.5
	White or Caucasian	929	92.9	93.8	97.4
	Hispanic, Latino, or Spanish origin	4	.4	.4	97.8
	Biracial or multiracial?	12	1.2	1.2	99.0
	IF VOLUNTEERED: some other group	10	1.0	1.0	100.0
	Total	990	99.0	100.0	
Missing	Don't know	2	.2		
	Refused	8	.8		
	Total	10	1.0		
Total		1000	100.0		

Q27 For statistical purposes only, we need to know your total household income.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Under $10,000	42	4.2	4.8	4.8
	2. $10,001 to $20,000	70	7.0	8.0	12.9
	3. $20,001 to $30,000	94	9.4	10.8	23.7
	4. $30,001 to $40,000	125	12.5	14.4	38.0
	5. $40,001 to $50,000	113	11.3	13.0	51.0
	6. $50,001 to $75,000	194	19.4	22.3	73.2
	7. Over $75,001	233	23.3	26.8	100.0
	Total	871	87.1	100.0	
Missing	Don't know	16	1.6		
	Refused	113	11.3		
	Total	129	12.9		
Total		1000	100.0		

Q28 (Ask only if uncertain) Are you...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Male	433	43.3	43.3	43.3
	2. Female	567	56.7	56.7	100.0
	Total	1000	100.0	100.0	

KNOWSCL1 Knowledge scale: Number correct (8 possible)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	24	2.4	2.4	2.4
	1.00	87	8.7	8.7	11.1
	2.00	136	13.6	13.6	24.7
	3.00	208	20.8	20.8	45.5
	4.00	187	18.7	18.7	64.2
	5.00	151	15.1	15.1	79.3
	6.00	111	11.1	11.1	90.4
	7.00	70	7.0	7.0	97.4
	8.00	26	2.6	2.6	100.0
	Total	1000	100.0	100.0	

KNOWGRD1 Environmental knowledge "grade" (out of 8)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A (7-8)	96	9.6	9.6	9.6
	B (5-6)	262	26.2	26.2	35.8
	C (4)	187	18.7	18.7	54.5
	D (3)	208	20.8	20.8	75.3
	F (0-2)	247	24.7	24.7	100.0
	Total	1000	100.0	100.0	

KNOWGRD2 Environmental knowledge "grade" (out of 14)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A (12-14)	101	10.1	10.1	10.1
	B (10-11)	207	20.7	20.7	30.8
	C (9)	149	14.9	14.9	45.7
	D (7-8)	269	26.9	26.9	72.6
	F (0-6)	274	27.4	27.4	100.0
	Total	1000	100.0	100.0	

Q21.REC What is the highest level of education that you have completed? RECODED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	HS/GED or less	292	29.2	29.3	29.3
	Some College	353	35.3	35.4	64.6
	BA or more	353	35.3	35.4	100.0
	Total	998	99.8	100.0	
Missing	REF	2	.2		
Total		1000	100.0		

Q27.REC Income RECODED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	$30k or less	206	20.6	23.7	23.7
	Over $30k to $50k	238	23.8	27.3	51.0
	Over $50k to $75k	194	19.4	22.3	73.2
	Over $75k	233	23.3	26.8	100.0
	Total	871	87.1	100.0	
Missing	DK	16	1.6		
	REF	113	11.3		
	Total	129	12.9		
Total		1000	100.0		

Q26.REC County RECODED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7 County Metro	523	52.3	52.5	52.5
	Other Metro	169	16.9	17.0	69.5
	Non-Metro	304	30.4	30.5	100.0
	Total	996	99.6	100.0	
Missing	REF	4	.4		
Total		1000	100.0		

Appendix D

Demographic profile of survey respondents

The figure below provides a demographic profile of the survey respondents. As would be expected from a random-digit dial survey, the sample's demographic characteristics reflect the adult population of Minnesota, as reported by the U.S. Census Bureau. As shown in the figure, women are slightly over-represented in the sample. The sample is somewhat older and more highly educated than the actual adult population in Minnesota. Additionally, the racial composition of the sample is slightly more Caucasian than the actual adult population. Some of the differences between the sample and the broader population may be due to language barriers, since interviews were conducted only in English. Other differences may be due to the relative availability of respondents; for example, young adults are typically more difficult to contact. In sum, however, these differences should not be considered large, and the sample should be considered a good representation of adults in Minnesota.[2]

Demographic profile of survey respondents

	Survey	*Census 2000*
Sex		
Male	43%	48%
Female	57%	52%
Age		
18 to 24 years old	7%	13%
25 to 44 years old	38%	41%
45 to 64 years old	37%	29%
65 or older	18%	16%
Educational attainment		
Less than a high school diploma	6%	11%
High school graduate or GED	22%	31%
Some college	21%	23%
2-year degree (AA, AS, etc.)	14%	7%
College graduate (4-year degree, BA, BS)	26%	19%
Graduate degree (MA, MS, MD, PhD, etc.)	10%	9%

[2] All of the results presented in this report are un-weighted. Some users of this data may choose to weight it by demographic or household variables. In addition to the demographic characteristics, survey results are occasionally weighted by number of adults in the household or number of telephone lines to correct for selection probabilities. In practice, weighting often does not substantially change the results of carefully-conducted random-digit dial surveys such as this study.

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Demographic profile of survey respondents (continued)

	Survey	Census 2000
Race/ethnicity		
African American or Black	2%	3%
American Indian	1%	1%
Asian, Asian American, or Pacific Islander	1%	2%
White or Caucasian	94%	90%
Hispanic, Latino, or Spanish origin	< 1%	2%
Biracial or multiracial	1%	1%
Other	1%	< 1%
Geographic distribution		
Twin Cities metropolitan area (7-county)	53%	*52%*
Greater Minnesota	47%	*48%*

Source: *Minnesota Report Card on Environmental Literacy,* U.S. Census Bureau (including Supplemental Survey for education and income).
Note: All percentages include adults age 18 and older, except educational attainment, which includes only those age 25 and older.

Appendix E

List of Referenced Reports

League of Conservation Voters Education Fund. 2000. *Minnesota Statewide Survey.*

Metropolitan Council Environmental Services. 1998. *Customer Research Project.*

Minnesota Department of Natural Resources. 2000. *Awareness and Satisfaction Survey Results.*

Minnesota Pollution Control Agency. 1999. *Report on the Governor's Forums: Citizens Speak Out on the Environment.*

National Environmental Education and Training Foundation/Roper Starch Worldwide. 2001, 2000, 1999, 1998, 1997. *The National Report Card on Environmental Knowledge, Attitudes and Behaviors.*

National Telecommunications and Information Administration and the Economics and Statistics Administration. 2001. "A Nation Online: How Americans Are Expanding Their Use of the Internet." *http://www.ntia.doc.gov/ntiahome/dn/index.html*

Pennsylvania Center for Environmental Education. 2000. *The First Pennsylvania Environmental Readiness for the 21st Century Survey Report.*

Pew Internet and American Life Project. 2001. Daily Internet Activities. *http://www.pewinternet.org/reports/chart.asp?img=Daily_Internet_Activities.jpg*

TIME.COM 2001. Are You Eco-Conscious? *www.time.com/time/magazine/printout/0,8816,104757,00.html*

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